PALWAY GAZETTE A Journal of Management, Engineering and Operation

A Journal of Management, Engineering and Operation

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CONTENTS

					PAGE
Editorials				 	325
Letters to the Editor				 	330
Publications Received				 * *	331
The Scrap Heap				 * *	332
Overseas Railway Affairs				 	333
Welded Bridge Failures	in Bel	gium		 	335
Road Transport Section				 	337
Railway News Section				 	351
Personal			* *	 	351
Transport Services and	the V	Var		 	354
Railway Share Market				 	364

DISPATCH OF "THE RAILWAY GAZETTE" OVERSEAS

We would remind our readers that there are many overseas countries to which it is not permissible for private individuals to send printed journals and newspapers. The RAILWAY GAZETTE possesses the necessary permit and machinery for such dispatch, and any reader desirous of arranging for copies to be delivered to an agent or correspondent overseas should place the order with us together with the necessary delivery instructions.

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We would emphasise that copies addressed to places in Great Britain should not be re-directed to places overseas, as they are stopped under the provisions of Statutory Rules & Orders 1939, No. 1440

TO CALLERS AND TELEPHONERS

In view of the restoration of summer time our office hours until further notice are:—

Mondays to Fridays - 9 a.m. till 5 p.m. Saturdays - 9 a.m. till 12.30 p.m.

The office will be closed on the first Saturday in every month until November 2, inclusive.

With the object of conserving paper by avoiding the return of unsold copies, readers are advised in the interests of all concerned to place a regular order for The Railway Gazette either with their newsagent or direct with the Publisher

London & North Eastern Dividend

M ARKET estimates of 1939 earnings on L.N.E.R. 4 per cent. second preference stock proved over optimistic. Instead of more than 1 per cent.—some guesses had ranged as high as 1½ per cent.—the directors' recommendation was ¾ per cent. Net revenue for the eight pre-war months of 1939 was higher by £1,572,000; for the full year is was £9,271,030 or £2,617,863 more than for the similar period of 1938. Dividend payments for the past 10 years are shown in the following table:—

		1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	
		0/0	9/0	9/0	%	%	0/0	0/0	%	%	%	
Pref. ord 5%	***	4	nil									
2nd pref. 4%		4	1	nil	nil	nil	nil	+	12	nif	4	
1st pref. 4%		4	4	1	2	34	31	4	4	nil	4	
Red. pref. 5%		5	5	14	21	416	416	5	5	nil	5	

As shown in the company's statement, which is given on page 363, the amount available for dividends was £5,139,524 or £2,622,918 more than for 1938. The payment on the second preference stock was not fully earned by £2,775, the carry forward being depleted of that amount. In 1937 net revenue was £10,107,442.

A Great Locomotive Engineer

With the passing of Mr. S. M. Vauclain of the Baldwin Locomotive Works, the locomotive world loses one of its most picturesque figures. A man of great ability as a designer as well as a builder, Vauclain lived his active life during a period of locomotive history when development was full of opportunities. Compounding was given great attention and here Vauclain played a noteworthy part. The well known four-cylinder design with superimposed outside cylinders, built to provide a more powerful engine than could be attained with the two-cylinder cross compound system, yet preserving the outside position for the cylinders, was in many respects successful. One of its greatest defects was the weight of the reciprocating parts, and another, perhaps not quite so apparent, was the effect of any difference in the relative piston loadings of the high and low pressure pistons, both piston rods being connected to the same crosshead. Even so the famous Atlantic City Flyers were at one time worked by the Vauclain compound Atlantic type engines. In due course Vauclain adopted the simple expedient of turning each of the two cylinder blocks through an angle of 90 deg., thus bringing the small H.P. cylinders between the frames and in the same horizontal plane as the L.P. cylinders. By connecting the H.P. pair to a crank axle the troubles due to the heavy reciprocating masses were overcome and what was called a balanced compound emerged.

Mersey Railway Company

Although the modified form of accounts issued as the result of the war gives little data on which to work, it is obvious from the profit figures that the progress which has been noted on the Mersey Railway for the two previous years continued in 1939. The report of the directors shows that net revenue, including estimated adjustment for the control period from September 1 to December 31, 1939, in accordance with the agreement with the Government, was £100,938 or £6,271 more than for 1938. The balance brought in was £2,600, giving a total available of £103,538 against £96,868. Debenture service takes £56,143 and £2,000 (against £1,000) is placed to general reserve; the dividend on the 3 per cent. perpetual preference stock absorbs £19,472. From the balance of £25,923 (against £20,253) available for consolidated ordinary stock, the directors recommend the payment of a dividend of 1½ per cent. (which compares with 1½ per cent. for 1938) and carry forward £2,973.

Overseas Railway Traffics

Three striking improvements in Argentine railway traffics in the past fortnight may be recorded. Buenos Ayres & Pacific decreases have been stopped for the present and the fall in traffics has been reduced by 100,000 pesos in the 34th and 35th weeks. In the same period the Buenos Ayres Great Southern decrease of 268,000 pesos has been converted into an increase of 681,000 pesos, and the Buenos Ayres Western has further improved its position to the extent of 134,000 pesos. Central Uruguay figures for the 34th and 35th weeks are up £16,730 and \$50,949 in currency. Antofagasta receipts for the first eight weeks of the current year have improved by £45,790, and Great Western of Brazil and Leopoldina figures for the same period are up both in sterling and in currency.

	No. of Week	Weekly Traffics	Inc. or Decrease	Aggregate Traffic	Inc. or Decrease
Buenos Avres & Pacific*	35th	1.870	- 50	45,063	862
Buenos Ayres Great Souther	n* 35ch	3,116	710	78,506	681
Buenos Ayres Western*	35th	831	102	26,421	2,149
Central Argentine*	35th	1,660	- 344	60,857	3,275
		£	£	£	£
Canadian Pacific	8th	608,400	113,800	4,832,200	1,053,200
Bombay, Baroda & Cent	ral				
India	48th	264,375	9,000	7,957,575	77,250
* Tr	affic receipt	s in thousa	ands of pesos		

In January, 1940, Canadian Pacific gross earnings were £2,449,000, an increase of £509,200 on January, 1939. Net earnings amounted to £365,800, an improvement of £273,600.

Londonderry & Lough Swilly Railway Company

The principal business carried on by the company is road transport and net receipts from this section improved in the year 1939 by £1,735 to £4,346 as compared with 1938. Passenger services yielded slightly lower gross receipts at £44,505, but goods services returned £3,560 more at £23,674. Railway gross receipts were £22,396 (against £20,758) and expenditure £25,694 (against £25,297) so that railway net receipts showed a debit of £3,298 which was better by £1,241 than the result for the preceding year. The loss on steamboats was £132 against £25 in 1938. Miscellaneous receipts (net) were only £355 against £3,633 in 1938 when grants-in-aid were received from the Governments of Northern Ireland and Eire totalling £3,167. Some comparative figures for the past three years follow:—

	1937	1938	1939
	£	£	£
Gross receipts from businesses	87,311	86,216	90,953
Expenditure	88,691	88,169	90,038
Net receipts	Dr. 1,380	Dr. 1,953	915
Miscellaneous receipts (net)	3,607	3,633	355
Total net income	2.227	1.680	1.270

The final result of the year's working in all departments was a debit of £4,912, which is carried forward and compares with a debit of £3,353 brought in.

*

British Railways in Brazil

Full details are now available of the terms under which the Brazilian Government is granting loans of 40,000 contos of reis and 30,000 contos of reis to the Great Western of Brazil Railway and the Leopoldina Railway Companies respectively. A message from our special correspondent in Brazil, given on page 361, sets out the terms at length. Broadly, the loans are to be made in vearly instalments of 10,000 contos in each case and are specifically earmarked for the restoration and improvement of lines and rolling stock, so far as the Great Western is concerned, and for the equipment of workshops, purchase of rails, locomotives, and rolling-stock, improvement of signalling, rebuilding of old bridges, and relaying of permanent way, in the case of the Leopoldina. These loans are to be repaid in instalments out of traffic receipts. It is provided that all profits exceeding 6 per cent. on capital are to be handed over to the Treasury for this purpose. The definition of profits is important; it is to be the excess of gross receipts over ordinary and extraordinary expenses of operation and renovations, and interest on and amortisation of debentures and capital.

Noise Reduction

All-metal rolling stock has tended to accentuate the problem of noise suppression in trains, and close attention is being given to the question in France, in proof of which a valuable paper entitled "Reduction of Noise in Railway Rolling Stock" appears under the joint authorship of M. Bancelin and M. Renault in the January number of the Bulletin of the International Railway Congress Association. The paper is mathematical in treatment, but some readily assimilated generalisations are given here and there, of which an important one is that human beings react differently to any given noise. Also certain pitches and certain combinations of sound may be more disagreeable to people generally than much louder sounds of a different kind. Most of us are more susceptible to such sounds as that made by a slate pencil or by someone grinding his teeth than we are to the rhythmical thump-thump of wheels over rail joints. Our own experience leads us to believe that attention-compelling noises ought to be distinguished from sleep-inducing ones, but if we pursued this theme we should probably find our fellow passengers more at fault than trains. Probably the worst noises are the variable ones such as intermittent squeaks and rattles, irregular thumps and bangs, and above all the barkings and shrickings of an animated party of persons trying to "outdo" the train. 200

Rail Straightening

It is becoming a fashion with certain Continental rail users to specify in their contracts that the rails shall be subjected to roller straightening, which is now largely in vogue in steelworks abroad, particularly in Germany. To include such a provision in a rail specification assumes that it is not possible by ordinary gag straightening to obtain the same standard of straightness as with a straightening machine, but this is far from being the case. The key to good rail straightening is found in all the handling that the rail receives from the last pass or two through the rolls to the hot saw, from there to the hotbank, and on until it is cold-that is to say, before it has so much as reached the straighteners. If the rail is received by the straightening machine in a reasonably good condition, the machine will certainly turn out a perfect job; but if the rail is received in a bad condition, machine straightening can subject it to more violent stresses than hand straightening, and in any event supplementary hand-straightening of the rail-ends, with which the machine cannot cope, may also be necessary. chief beneficiary from the installation of roller straighten-ing is the steelworks itself, because of both the reduction in the number of men employed on the straightening, and the considerable expedition of their work; but this benefit can be secured only at the price of a costly piece of steelworks equipment.

A Locomotive Feed-Water Problem

During 1939 a prolonged drought in the United States resulted in such water shortage that various services had to be curtailed. The railways managed fairly satisfactorily by reason of the forethought given to maintaining water supplies for the locomotives. Indeed, at a number of points, only the railways could command adequate water supplies, and, in addition to their own needs, they were

able to supply municipalities and industrial concerns. The drought, however, brought to light many cases of inadequate or undependable water supplies on the railways, and not infrequently the remedies were found to be costly. As water shortages are liable to occur from time to time, the need for further improvements is too obvious to be neglected. The report from which we are quoting observes that the increased earnings of the U.S.A. railways during the latter part of 1939 and the better prospects for 1940 should encourage more extensive investigations, and improvements to obviate future failure in the water supply c-sential to transport.

Failures of Welded Bridges

One of the most important occurrences since the introduction of welding in place of riveting for steel structures has been the failure of certain welded bridges in Belgium. On page 335 of this issue we give particulars of two such failures which occurred, during the recent intensely cold spell, to bridges generally similar in design to that which failed on March 14, 1938, at Hasselt. All three bridges carry roads, on which are laid tracks of the numerous Belgian light railways, across the new Albert Canal. In recording that particular case we expressed it as our opinion, based upon personal observation of the structure after its failure, that weaknesses in design, in quality of steel, and in welding procedure, might possibly have been responsible, at least in part, for the collapse. The new failures may have been precipitated by the extraordinarily low temperature which prevailed at the time, but, although the long-expected official report on the Hasselt bridge collapse has not yet been published, it is of importance to observe that the Belgian National Railways (who, by the way, have no responsibility whatever for the Albert Canal welded bridges under consideration) are continuing to adopt on an extensive scale welding for engineering structures. One of the most notable examples of this is to be found in the new steel viaducts on which the north-south line at present under construction through the heart of Brussels is carried immediately north of the Midi station. A great deal of vital welding is being incorporated in this viaduct, but the quality of the materials and workmanship is subject to very strict supervision and constant testing. This fact alone should reassure engineers who are continuing to incorporate welding in their designs or contemplate so doing.

The Young Idea

A census of railway enthusiasts today would reveal many whose interest dates from the days of the war of 1914-19. If to some of them now a railway journey seems less attractive than it did before last September, they should consider that a new generation of enthusiasts must be coming along to which blue lights, surreptitious peeps beneath drawn blinds to identify stations in the dark, and locomotive cabs hooded to minimise glare, undoubtedly seem indispensable adjuncts of that stupendous non-stop spectacle, the British railway system at work. we have no doubt that in fulfilling their vital tasks under conditions decidedly inimical to glamour, our railways will retain their traditional fascination, and have their well-informed students of tender years. It is from this quarter that we await with confidence a penetrating and justified criticism of a certain familiar poster, on which what is clearly a L.N.E.R. "Green Arrow" class locomotive emerging from a tunnel is described as the type of engine that before the war used to draw holiday expresses to Folkestone, Margate, and other resorts in which its appearance would create a sensation among the initiated.

News and Censorship

IN a country which has long enjoyed the freedom of the press, censorship-even in wartime-is naturally irksome in principle, and this doubtless explains much of the stringent criticism and even abuse which has been directed towards the Ministry of Information and the Press & Censotship Bureau, Before the outbreak of war, but when that event looked imminent, it was obvious that some form of censorship would be introduced, and editors and publishers soon learned that this was to take the form of voluntary censorship in which the largest possible measure of discretion would be left to the press itself. Possibly many persons still fail to realise that the final responsibility for the publication of any matter rests in law with the editor or publisher. Fundamentally, it is an offence under the Defence Regulations, which, of course, have statutory force, to publish certain classes of matter, and every editor and publisher is under the legal obligation of observing this, as every other, branch of the law. As, however, the primary object of such restriction is to prevent the enemy securing information helpful to his activities, the damage caused by infringement could not be repaired through the levy of penalties by the Court on the offender. The desideratum of Defence laws is to prevent leakage to the enemy and not, like most laws, to secure justice as between two citizens of the same country, or between a citizen and his Government. Thus, the function of British censorship is to give guidance and rulings as to the propriety of publishing any particular item or illustration voluntarily submitted.

At first this censorship was a function of the Ministry of Information, which was established to combine in one organisation the activities in the 1914-19 war of several independent authorities, notably, the Ministry of Informa-tion (under Lord Beaverbrook), the Department of Enemy Propaganda (under Lord Northcliffe), the War Press Bureau, and the press sections of individual Government departments. The two functions particularly concerning the press are those of News and Censorship. News, in the sense accepted by readers of the popular daily press, is information about unusual happenings, and particularly those of "human interest." In wartime most of such information concerns the movements of our own and Allied Forces, the activities of the enemy, and the general progress of the war effort—all matters within the obvious scope of Censorship. The Ministry therefore undertook from the outset the dissemination of official news and the voluntary censorship of information gleaned by the press through its own channels. The practical difficulty of reconciling the need for quick publication of news with the necessity of withholding vital secrets from the enemy, resulted almost inevitably in some early friction between Ministry and the press for which certain daily newspapers (both London and American) were not without a large measure of responsibility, and which was magnified unnecessarily at a time when more serious war " news was happily lacking.

One result was the segregation of the News and Censorship functions of the Ministry of Information from its other activities, and on October 9 these became a department of the Home Office under the title of the Press & Censorship Bureau, of which Sir Walter Monckton, K.C., is Director-General. In a speech he made when principal guest at the Christmas dinner of the journalists accredited to the Press Bureau, he said: "Censorship is an art and not a science. There are no rigid rules which could ever answer each of the individual problems which constantly come up for decision throughout the day. We censors inevitably make mistakes in exercising our discretion and, if you chose to hit us every time, you could score off us with the

fluency and facility of a Bradman." For our part, the group of trade and technical papers associated with The Railway Gazette would have a score far below the Bradman standard, even if it included every "bye" and "wide" as well as hits. During the six months of war and censorship we have had intimate relationships with practically every aspect of the work of the Bureau. In our experience, courtesy and helpfulness on the part of the officials have been unvarying, and we do no more than bare justice in paying tribute here to the efficiency which characterises the vast majority of the activities of the Press & Censorship Bureau.

London Midland & Scottish Railway Company

FROM the report and accounts of the London Midland & Scottish Railway Company for the year 1939, which are published in the abbreviated form prescribed by the Minister of Transport, it is clear that the satisfactory dividend of 1½ per cent. on the ordinary stock was earned without trenching upon the carry forward more than to the trifling extent of £30,070. Dividends on the ordinary stock for the past twelve years have been as follow:—

For the first half of 1939 the results achieved by the company were an increase of £25,000 in receipts and a decrease of £612,000 in expenditure, making a net increase of £637,000. The improvement in net revenue then shown continued at a greater rate in July and August, and for the eight months to August 31 the net revenue was £1,678,000 in excess of the corresponding period of 1938. The net revenue for the year includes the estimated amount accruing to the company under the financial arrangements made with the Government. Results for the past three years are summarised in the following table:—

1937	1938	1939
£	£	£
456,684,343	459,285,651	460,462,477
154,509	290,555	189,960
2,149,900	2,1 8,272	*534,927
14,356,276	11,345,520	14,311,520
4,439,170	4,439,170	4,439,170
		.,,
8,474,383	6.869.024	8,474,383
	3455-755-7	
1,442,723	37,326	1,397,967
	- mari	1,428,037
	Nil	14
		-30,070
	1,	
79.083	93.769	131,095
,		,
93,769	131,095	101,025
	£ 456,684,343 154,509 2,149,900 14,356,276 4,439,170 8,474,383 1,442,723 1,428,037 1,1 11 + 14,686 79,083	456,684,343 459,285,651 154,509 290,555 2,149,900 2,1 8,272 14,356,276 11,345,520 4,439,170 4,439,170 8,474,383 6,869,024 1,442,723 37,326 1,428,037 Nil +14,686 79,083 93,769

 $\ensuremath{^{*}}$ Other than those included in financial arrangements with Government

The miscellaneous receipts of £534,927 shown above include £409,708 dividends from associated bus companies, compared with £346,525 in 1938. They also include the following profits from goods road undertakings, namely, £14,963 from Carter Paterson & Co. Ltd., £24,748 from Hays Wharf Cartage Co. Ltd., £1,000 from Joseph Nall & Co. Ltd., and £2,068 from Wordie & Co. Ltd. David McBrayne Limited brought in £9,000. The Northern Counties Railway (Ireland) made a profit of £30,337 in 1939, which compares with a loss of £4,726 in 1938, and a profit of £2,374 in 1937.

South African Railways and Harbours

THE report for the year ended March 31, 1939, on the South African Railways, Harbours, Steamships, and Airways, which we have received from Mr. T. H. Watermeyer, the General Manager, shows that whilst during the year under review there was a slight falling off in traffic and revenue in comparison with a particularly busy twelve months in 1937-38, the volume of business done on the railways was satisfactory and afforded further striking proof of the economic stability of the country. Revenue from the combined services was £38,533,092, a decrease of £700,547 in comparison with the previous year, and total working expenditure on all services, including depreciation and interest on capital, but excluding appropriations from net revenue, amounted to £34,943,110, an advance of £1,867,555, leaving a surplus of £3,589,982. Net revenue appropriations take £3,707,879, leaving a debit balance of £117,897 to be carried forward. By the measures taken on the Witwatersrand and in other areas to improve facilities for dealing with heavy traffic a revolutionary change has already taken place in the railway transport

As regards the results of working the railways only earnings, in comparison with 1937-38, decreased by £788,632 or 2.36 per cent., and gross working expenditure advanced by £1,117,766 or 4.81 per cent. Passenger journeys exceeded the previous record figure of 1937-38 by 8,227,822 or 7.80 per cent., and passenger revenue expanded by £169,896 or 2.95 per cent. The improvement was chiefly in suburban journeys which increased by 8,128,939 and produced receipts which were higher by £125,853 or Main and branch line passengers increased in number by 98,883 or 0.79 per cent., and the increase in revenue was £44,043 or 1 per cent. The quantity of revenue-earning goods and mineral traffic was less by 806,798 tons or 4 per cent., and the receipts therefrom were lower by £1,074,611 or 5.02 per cent. This decline was due mainly to a considerable falling off in the quantities of maize, manganese ore, chrome ore, machinery, and building material loaded. Coal traffic, on the other hand, produced a new record and increased by 309,692 tons or 3.15 per cent., giving receipts which were higher by £50,887 or 1.36 per cent. Figures relating to the railway transportation service compare as follow:-

			1937-38	1938-39
Passenger journeys	***	***	105,475,637	113,703,459
Goods and minerals, tons			20 155 009	19,348,211
Coal traffic, tons	***	***	9,819,807	10,129,499
Ton-miles (revenue earning	g)		7,337,148,728	6,643,183,715
Average haul, miles			242	223
Route-miles open		***	13,263	13,285
Train-miles		***	60,397,400	59,829,326
Operating ratio, per cent.			69.54	74-65
			6	f
Capital expenditure (open	lines)	***	156,698,405	162,966,873
Passenger receipts		***	5,750,035	5,919,931
Goods and mineral receipt		***	21,403,112	20,328,501
Coal traffic receipts			3,729,971	3,780,858
Total earnings			33,388,773	32,600,141
Working expenditure			21,014,207	22,070,293
Gross working expenditur	re (inclu	iding		
depreciation)			23,218,919	24,336,685
Surplus over expenditure			10,169,854	8,263,456
Surplus over interest, etc.		***	5,582,106	3,484,431

Working expenditure, excluding depreciation, showed an increase of £1,056,086 or 5·03 per cent. and represented 67·70 per cent. of gross earnings, against 62·94 per cent. in 1937-38. Additional expenditure on maintenance of track, track structures, and buildings and grounds, was mainly responsible for the increase of £390,576 or 12·56 per cent. on maintenance of permanent way and works. On maintenance of rolling stock there was an increase of £107,452 or 2·44 per cent. The increase of £113,814 or 1·81 per cent. in running expenses was partly attributable

to increased consumption of electric power. expenses advanced by £323,718 or 6.05 per cent. Increased payments in respect of salaries and wages due to the merging of the extra responsibility allowance into substantive rates of pay, improved service conditions, and the rent rebate scheme accounted mainly for this advance. Similar factors also constituted a substantial part of the increases under the other heads of expenditure above-mentioned. Harbours gave a profit on working of £980,064, and a net surplus of £426,050 was carried to revenue appropriation account. Airways revenue increased from £156,658 to 1234,948, but the deficit on working rose from £150,643 to 1325,544. Revenue from road motor services increased by 741,666 to £654,541, but as expenditure also rose by 196,258 to £683,011 there was a deficit of £28,470. Railways in South West Africa earned £511,126 in the year under review against £486,925 in 1937-38, but expenditure advanced from £671,726 to £741,184, resulting in a deficit of £230,058. On new works and improvements on open lines sums amounting to £6,379,575 were expended during the year under review from loan and betterment and renewal funds. Except for one section, which is now in process of conversion, the Witwatersrand suburban passenger service is operated by electric traction. The Midway-Bank railway of 21 miles was opened to public traffic on November 6, 1938.

The Argentine Railway Pension Fund

THE future of the Argentine Railway Pension Fund continues to be the subject of discussion in the Argentine press. Certain proposals for the reform of the Railway Pension Law, with a view to placing the fund on a more secure basis, figure among the questions to be dealt with by Congress during the 1939 session, but the legislative period expired without anything being done in the matter. The latest figures published regarding the position of the fund show that the number of beneficiaries is rising at the rate of about fifty a week, while the amount of the pensions is increasing by approximately \$10,000 in the same period. Against this has to be set the fact that in 1938 expenditure exceeded receipts by over ten million pesos. The numbers of new pensions granted since 1932 are as follow:—

Year	1	lumber		Year	1	Number
1932	 	890		1936		1,468
1933	 ***	830	,	1937		1,594
1934	 	784		1938		2,024
1935		969				

The figure for 1939 is expected to show a further heavy increase. In this connection, La Prensa has recently been criticising the action of the railway managements in putting pressure on those employees who are eligible for their pensions to apply for them, on the grounds that this policy is causing an increasing drain on the fund, besides being unfair to employees who are physically fit and anxious to remain in their posts. While there is a certain amount of truth in this statement, the matter has also to be looked at from the companies' standpoint. It must be remembered that in the present circumstances this is practically the only economical measure which it is within the power of the worried managements to carry out. For many years the Argentine railways have been operating at a serious loss, owing to the increasing competition from road transport, not to mention the heavy loss on exchange, which has cost the companies many millions of pounds per annum. Working expenses have been reduced to the minimum consistent with safety and efficiency; yet, despite the most drastic economies, almost a decade has elapsed since the shareholders received any dividend.

When the companies first found themselves faced with economic difficulties in 1931, they submitted to the Government a joint scheme of reorganisation and retrenchment, which included among other economies in working a reduction in staff, to enable them to tide over the crisis without financial disaster. These proposals the unions vehemently resisted, and, after lengthy negotiations, the only concession to which they would agree was the institution of a scale of salary and wage cuts on a pro rata basis, combined with short time in the workshops, which, besides being difficult to apply equitably, was only tinkering with the problem, and produced no real economy for the companies. Even this slight alleviation of their difficulties proved to be only temporary, as the Presidential Award of 1934 ruled, in response to the demands of the unions, that the sums deducted in this way were to be regarded as temporary retentions, to be returned when circumstances permitted—a condition with which the companies have scrupulously complied. The agreements entered into with the unions, with the consent of the Government, by which the companies assented to the establishment of the escalafon system of promotion, at the same time pledging themselves not to dismiss surplus staff when times are bad, have tied their hands. Refused permission to increase their tariffs, and denied the right possessed by every commercial concern of reducing their staffs when conditions demand it, the railway managements would obviously be failing seriously in their duty to their shareholders if they did not take advantage of the provisions of the Pension Law to reduce their staffs as far as possible to more reasonable proportions.

It should be emphasised that the companies are in no way to blame for the unsatisfactory state of the Pension When the scheme was first proposed, it was pointed out by skilled actuaries as well as experienced railway officials that its provisions were fundamentally unsound, and were bound eventually to land the fund in difficulties. It is generally admitted that drastic reforms in the Pension Fund regulations, involving in all probability a reduction in the benefits, combined with an increase in the monthly contributions, are urgently called for, and can no longer be delayed, if ultimate insolvency is to be avoided. For this reason it is to be hoped that the matter will receive the early attention of Congress during the coming session. But meanwhile it is manifestly unjust to expect the companies to bear the burden of the faulty arithmetic, the fallacies of which they were the first to point out.

The question, however, is not whether or not the companies are within their rights in taking advantage of the provisions of the Pension Law as a means of relieving their unduly swollen paysheets, but whether they are exercising this prerogative to the full extent that their financial position would seem to justify them in doing. It is in this direction that there would seem to be scope for an even more vigorous application of the pruning knife. determined opposition of the labour unions to any attempts on the part of the companies to discharge surplus staff is inspired partly by the fear that dismissals would be confined to the workmen and lower paid employees, while the administrative staff would be unaffected. Were it made clear that all officials, irrespective of their standing in the service, who were eligible for their pensions, would be required to take them forthwith, the unions might be more ready to agree to dismissals among the workmen. Besides reducing working expenses, such a policy would tend to accelerate promotion for the younger men, many of whom, as things are at present, are compelled to wait indefinitely for the advancement to which their abilities and qualifications entitle them, often to the detriment of the railway

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Copper in Locomotive Construction

53, Victoria Street, S.W.1. February 22

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,-In your issue of February 9, page 171, you have an article on the subject of "Copper in Locomotive Construction which I think calls for some remarks. In the first place locomotive designers in these islands are somewhat conservative and prone to travel on old and well-proved lines and to put off the use of new materials and methods until they have been tried and proved elsewhere. I cannot check the figures given in the article under review, but will concede that the majority of European locomotives are equipped with copper fireboxes, though I believe that it is a fact that a very large proportion of those built here for abroad are now having steel boxes.

I cannot, however, agree that the balance of advantage is on the side of the copper box. In the first place the cost of copper is excessive as compared with that of steel and the locked up capital on which interest has to be met is considerable. scrap copper no doubt has a good value, there is little to choose between the use of scrap and the use of new material in place thereof. Financially, therefore, steel has considerable advan-tages. The new heat-resisting alloys mentioned will also be covered by the same arguments. With the modern technique of manufacture also the advantage lies with steel, especially abroad as, while in time, the repair of copper fireboxes by welding may become as easy as is the case with the steel box, it is as yet one requiring considerably more skill, and men with that skill are not readily obtainable.

Conductivity, bearing in mind the difference in thickness, is also not overwhelmingly in favour of the copper box. In this connection it is well to remember that, while some years ago non-ferrous tubes were almost universal, they have now to a very large extent been replaced by steel, although the remarks as to conductivity apply as equally to the tubes as to the firebox. The steel firebox also, does not suffer to anything like the same extent from cracked flanges and bridges as the copper box and the tube holes do not lose shape to the same

Again weight, in the case of engines built to the limit of permissible load on rail, is considerably in favour of the steel box, and I have in late years frequently found that improved accessories have had to be cut out owing to the limit of weight being exceeded. It is strange that in the States, the source of much of the world's copper, steel is preferred.

Yours faithfully,

P. A. HYEE

Railway Publicity

London, March 5

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,-Consideration of the multifarious railway posters which have been displayed so lavishly during the last few months prompts one to enquire as to whether the Railway Executive Committee is not overdoing the publicity effort I refer, of course, to that type of poster which tells us that despite formidable handicaps "the railwayman still carries One hundred and fifty-three special trains a day for the Government. Split up between four companies this not such a great figure, is it? Such a number was not unknown prior to the war. I mean in ordinary railway working-not for the Government.

Naturally, the railways carry on! They are doing a good job of work too! but then so are hundreds of other industries and thousands of individuals, but they do not shout it from the housetops. We are all pulling our weight in the national effort. And we have difficulties as well. It is high time this blowing of trumpets by the railway companies was stopped, as it has reached the stage of very definite bad taste. The Square Deal publicity campaign, it will be remembered, was carried to lengths that reduced it to

Yours truly, HARROVIAN

International Timetable Conference

It will be recollected that the 1939 International Timetable Conference was to have been held in Istanbul in September last, but, on account of the outbreak of war, the conference was not held. However, despite a European war, there are still timetable questions arising between the neutral and belligerent countries, and a timetable conference was held at Gstaad, Switzerland (which is a mountain resort on the Montreux-Oberland Bernois Railway, some 45 km. from Montreux). The conference opened on Friday and Saturday, February 16 and 17, when the running of the Simplon-Orient Express was discussed. There were present representatives from the English, French, Belgian, Swiss, Italian, Jugoslav, Roumanian, Bul-garian, Greek, and Turkish administra-No representatives were present from the German railways.

Since the outbreak of war the Simplon-Orient Express has run regularly in each direction between Paris, Athens, Istanbul, and Bucharest, and, in fact, the traffic conveyed has been as good as, if not better than, in peace times,

while, in addition to its pre-war destinations, it now serves Rome, Geneva, and Budapest. On account of the extreme severity of the winter in Central and South-East Europe there have been delays from time to time, caused by heavy falls of snow, but otherwise conditions have been normal. It was re-ported at the conference that slight delays were occasioned on account of the formalities necessary at the various frontiers, and a slight re-timing of the train was agreed upon to obviate these.

It was also mentioned that in the spring of this year it is hoped that the last railway link of the Taurus Express will be completed-that is, between Mosul and Baiji. Up to the present this part of the journey has been performed by motorcoach, and when the throughout railway route is available there will be a saving of approximately 24 hours between Paris and Baghdad.

At the close of the Simplon-Orient Express Conference the Swiss Federal Railways entertained the delegates to dinner, when the chair was taken by Monsieur Paschoud, General Manager of

that administration, who made a speech, which was replied to by Monsieur Goursat, Operating Manager of the French National Railways, who had been the Chairman of the conference.

On Sunday, February 18, the delegates were able to take part in winter sports, and on Monday and Tuesday, February 19 and 20, a Direct Relations Conference was held, when opportunity was taken by the various participating administrations to discuss their various problems. At this conference the delegates were again entertained—this time to luncheon-by the Swiss Federal Railways, under the auspices of Monsieur Ballinari, Operating Manager, who welcomed the delegates, and expressed appreciation of the work which had been done at the conference. speech was replied to by Mr. Zarifopol, Traffic Manager of the Roumanian Railways, and by Mr. F. J. Wymer, the Assistant Continental Superintendent of the Southern Railway, who with Mr. H. J. Bourne, of the Continental Department, Southern Railway, represented the British railways.

PUBLICATIONS RECEIVED

Railway Posters and the War, No. 3. London: The Railway Gazette, 33, Tothill Street, S.W.1. 71 in. × 5 in. Price 6d. net.—The posters issued by the Railway Executive Committee and the railway companies have been reproduced in the series of articles entitled "Transport Services and War" which appears weekly in THE RAILWAY GAZETTE. Two booklets have been issued giving the posters issued to the times of their respective publications. In this, the third booklet, further posters, issued up to the end of the first six months of the war, are reproduced and in addition a selection important announcements made during the war of 1914-19 are included. These show the progress which has been made since then in this form of poster. \ further interesting feature of the booklet is the evidence it contains of a renewal of "goodwill" poster adverlising as distinct from announcements of changes in services.

Handbook Steel Construction. No. 22. London: R. A. Skelton & Co. Ltd., Moorgate Station Chambers, E.C.2. $8\frac{3}{4}$ in. \times 7 in. \times 1 in. 356 pp. Price 10s. net, post free.-Further changes in practice and in standard specifications have necessitated a complete revision of Skelton's well-known handbooks 20 and 21, which are now incorporated in a single volume, thumbindexed to ensure ease of reference. New features of the present edition are the adoption of the B.S. formula for columns, a chapter on slab bases, up-to-date details of welding practice and current London building regulations, a stouter binding, and many other improvements in form and arrangement. The handbook will be supplied exceptionally, during the war, at the reduced price of 7s. 6d. post free, for their personal use only, to engineering students and draughtsmen.

The Blue Book: The Electrical Trades Directory and Handbook. 1940. London: Benn Brothers Limited, 154, Fleet Street, E.C.4. $9\frac{1}{2}$ in. \times 6 in. 2½ in. 1133 pp. Price 25s. net.— When an annual directory reaches its 58th edition reviewers are apt to have exhausted most of the things to be said about it, good or bad. But in this case not only has "The Blue Book" built up for itself such a reputation for usefulness and accuracy that the shortage is of commendatory phrases, but also this 1940 issue does depart in some respects from the familiar aspect of former editions. One important feature is the inclusion of as many temporary addresses as the Editor has been able to collect down to the time of going to press; in the geographical section firms are still listed in the areas where they have hitherto been known, and their temporary addresses are added. This applies not only to purely electrical firms, but also to the many mechanical and allied engineering concerns whose

particulars are to be found in the directory. In the Handbook & Technical Sections the publishers have made a good effort to incorporate references to the many Statutory and other changes which have affected the electrical industry since the beginning of hostilities. For the time being, as a war measure, the publishers have also decided that "The Blue Book" shall incorporate "The Electrician Annual Tables of Electricity Undertakings. Essential information on systems of supply and voltages accompany the names of supply undertakings in the directory, though not so many details are given as in the usual Tables. Other features, which, however, partake of the normal because they are so familiar from previous editions, include facilities for quick reference by means of tabbed guide cards, lists of trade names and telegraphic addresses, tabulated and other technical data, and particulars of technical associations, trade associations, and technical schools.

The Viaduct. By Alan Gould. London: Hodder & Stoughton Limited, St. Paul's House, Warwick Square, $7\frac{1}{2}$ in. \times 5 in. \times $1\frac{1}{2}$ in. 320 pp. Price 9s. 6d. net.—This is a fascinating story of the lives of the men engaged in building an imaginary railway viaduct over the river Tamar from Devon to Cornwall, and the effect they had upon the inhabitants of the adjacent towns and villages and on those who used the steamers plying up and down the river. The outstanding personality is that of Seabright, the engineer who takes charge of the viaduct halfway through its construction. His character is cleverly portrayed, and he is the type one associates with the early engineers. His many difficulties with the prejudices and narrow views of the local people are skilfully told, and sympathy is equally balanced between Seabright and the Devonshire and Cornish folk to whom the engineer and his mixed gangs of workmen are not merely alien but something to be loathed and shunned. The women in the story are well drawn and true to life and do not dominate the story too much. The lure that the viaduct had for a little Cornish lad, and his reply to its call, is one of the high-The description of lights of the book. the locality and its scenery through various seasons of the year is good.
"The Viaduct" is a really enjoyable

Signal Lamps.—Although war conditions are frequently given as a reason for lack of enterprise, they have not prevented the issue of an extremely comprehensive catalogue of the oilburning signal lamps made by Lamp Manufacturing & Railway Supplies Limited, of River Plate House, London, E.C.2. Manufacture of the Welch and Adlake types of lamp was brought under the same control in 1933, and in the intervening seven years continued pro-

gress has been made in design and construction, particularly in the directions of long-burning patterns and lamps used in severe climates. Actually, the word "Signal" in the title of this catalogue is used in its widest sense, for in addition to a large variety of lamps for semaphore and other running signals, it contains illustrated particulars of disc and switch lamps, speed restriction and warning lamps, gate lamps, guard's hand lamps, and locomotive lights of a variety which seems to be large enough to cover every possible railway requirement.

Tool Steels .- A range of tool steels intended specifically for use under hotworking conditions is described in booklet No. HW. 124 issued by Darwins Limited, Sheffield. Some interesting graphs show the Brinell numbers at temperatures of 400° to 750° C., and the corresponding Izod values are given in tabular form. As an example, the HW. 1 steel has a Brinell number of 412 at 400° C. and 222 at 750° C., with Izod values of 10 ft. lb. at 400° C. and 66 ft. lb. at 800° C. Throughout, there is an increase of toughness with increase of temperature, and in practice the tools must be warmed before being subjected to maximum loading.

The Rates Refund in Eire

All over Eire, the local authorities are now considering claims for refunds of rates paid by the Great Southern Railways Company and the Great Northern Railway. This, of course, is the result of the recent decision regarding the valuations made on railway undertakings, to which we referred editorially at page 241 last week. The Town Clerk of Dundalk has submitted a report stating that he has received a letter from the Great Northern Railway Company pointing out the effects of the decision, and asking for a refund of the excess of rates paid in the past three years. The valuation of the G.N.R. property in Eire had been reduced from £17,500 to £7,113, and the Town Clerk has estimated that the Council will have to refund £2,000 for rates collected within the past three years from the G.N.R., and that the reduction of rates in future from railway property in Dundalk will be £700 per annum. He has suggested to the railway company that, as the excess rates were collected over a period of three years, the repayments should be made over three years.

Representative of the claims of the

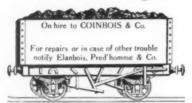
Representative of the claims of the Great Southern Railways Company are the following. Waterford Corporation has been served with a demand for the refund of approximately £2,400. Wexford County Council has received a claim for £8,540 10s. 3d., which is stated to require between 5d. and 6d. in the £ on the rates. Galway County Council has received a claim for £12,576. The demand on Athlone Urban Council for a refund of £1,077 is equivalent to 2s. in the £. The claim made to Clonakilty Urban District Council is for £115.

THE SCRAP HEAP

LORD STAMP-ECONOMIST ON PAPER The paper economists are going from

strength to strength. Yesterday received a letter written upon an old and frayed white starched collar. Lord Stamp, by the way, is an active cam-There is no waste of paper ce. When I called on him in his office. recently I wished to make a note of one or two points he made. His secretary brought me a new typist's notebook for this purpose. After leaving Lord Stamp with the book in my pocket, I was stopped by his secretary. She asked me to tear out the sheets I had used. She kept the book.—" I borough" in "The Daily Telegraph.

Private Owners' Wagons



Are these firms well known?

The management of the Netherlands Railways presented Princess Beatrix, on the occasion of her fourth birthday. with a complete electrically-operated model railway layout. The train is a 1/20th scale reproduction of the first one run in Holland, as seen at the recent Amsterdam exhibition, with two old-style station buildings, and passengers for which the clothes made by the daughters of Mr. Labrijn, the Locomotive Engineer. The model was made in the railway shops at Utrecht and Tilburg.

A DUTCH PIONEER OF SWISS RAILWAYS

It is not generally known that the system of metre-gauge lines in the Swiss canton of Grisons, now known as the Rhaetian Railway, the first section of which was opened fifty years ago, owes its origin to the efforts of a native of Holland, Willem Jan Holsboer, who was born at Zutphen in 1834, the son of a woollen goods dealer. A sailor for some years, he later entered banking, and in 1867 went to Davos, in Switzerland, in an endeavour to improve his wife's health. He settled there, took Swiss citizenship in due course, and eventually became manager of the Kurhaus at Davos. This led him to take a special interest in improving means of communication with the town. He came forward in 1872 with a plan for a line from Landquart to Davos, but some years passed before the scheme came to fruition with the assistance of local authorities and financial houses in Basle. Holsboer was active in furthering the work of the railway and on his

death in 1898 the chairman paid a high tribute to the services he had rendered to it, to the canton of Grisons, and to the Swiss railway system generally.

NO REPLY

To judge by the new edition of the A to K London Telephone Directory, the Germans are anticipating an early close to the war. The German Railways Information Bureau, the German Chamber of Commerce, and the German Air Lines (Deutsche Luft Hansa) are still listed in it. Though it was evidently not considered worth while to remove their numbers from the book, they were all unobtainable when I rang them this morning. Temporarily or permanently out of service?—From "The Evening Standard.

American romance is nowhere more persuasive than in railway Scouts, Trains wear delicious names. Pathfinders, and Navajos, redskins of every imaginable celerity, stand throbbing with steam up at platforms; firemen in overalls look down horn-spectacled and slightly self-conscious, from the tall cabs of waiting locomotives and shift cigar-ends in their mouths; soft Alabama voices gently exclaim "All aboard"; the driving wheels fly round and grip the rails; and the whole caravan-Scout, Sioux, or Pathfinder-moves off with a last gleam from the pictorial emblem on its rear platform.-From "Rag-time and Tango," by Philip Guedalla.



Cause and Effect!

Above: The signatures at the end of the G.W.R. accounts Below: How a sharehold r transcribed the name of the Secretary

The commercial accounts of the Post Office for the year ended March 31, 1939, have now been presented to Parliament by the Postmaster General. In addition to financial details, the following figures are given:-Total number of Post Offices 24.855

Telegraph offices 14,006 Telephone exchanges (of which 2.925 are automatic) 5.715 Telephone call offices

3 235 498 Telephones ... Mileage of wire 15,299,000 Motor vehicles owned by the 17.384 Post Office The Post Office personnel at March 31, 1939, numbered 283,371.

SCRIP CERTIFICATE.

LONDON & YORK RAILWAY. EXTENSION SHARES.

TO PROVIDE FOR THE BRANCH LINES FROM HERTFORD BY HATFIELD, ST. ALBAN'S AND LUTON, TO DUNSTABLE—FROM STAMFORD BY DEEPING TO SPALDING—FROM DONCAS TER BY WAKEFIELD TO LEEDS, &c. &c. [Registered Provisionally.]

OFFICES-7, LOTHBURY, LONDON.

ONE SHARE of £25, AMOUNT OF DEPOSIT

No. 1,525

BOOK 16.

THE HOLDER of this CERTIFICATE is entitled to One EXTENSION SHARE of £25, in the LONDON AND YORK RAILWAY—the Deposit of Two Pounds Ten Shillings (£2: 10s.) having been paid, and the Subscribers' Agreement and Parliamentary Contract, guaranteeing the payment of all further calls in respect thereof having been duly signed.

LONDON-1st day of December, 1845.

-This Certificate MUST be brought for regist Parliament for incorporating this Company; my; in default of

A scrip certificate of 1845 issued to the subscribers to a provisionallyregistered railway company that proposed to apply for an Act of Parliament to incorporate the company and sanction the construction of the line

OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

BRAZIL

North-Western Railway

Receipts for this railway for the year 1938 amounted to 38,542 contos of rels, exceeding the estimate by 4,942 contos and the previous year's total by 7,412 contos. Expenditure totalled 36,752 contos, leaving a balance of 1,790 contos, but expenses debited to capital account amounted to 12,758 The patrimony of the railway contos. was put at 310,491 contos which includes the Francisco Sá bridge over the river Paraná valued at 11,496 contos. Another bridge on which 1,999 contos have already been spent is in course of construction over the river Paraguay. Passengers carried during the year totalled 999,884 while freight and coffee transported represented 2,344,991 tonkm. and 210,857 tons respectively.

Roads and Railways

The Technical Council of Finance and Economics has just published the following statistics in regard to road and rail mileage in the various States of Brazil

				Kilor	netres
				Roads	Railways
Amazonas				384	5
e :		***		679	377
Maranhão				1,319	451
Plauhy .				7,324	185
- 1				4,265	1,240
Rio Grande	do Norte			4 200	502
Parahyba		***	***	3,332	487
Pernambuco	***	***	***	5,099	1,066
Alagôas				2,607	346
Sergipe				567	303
Bahia		***		11,517	2,146
Espirito Sant			***	4.790	775
Rio de Janei	ro	***		4,154	2,665
Federal Dist	rict	***	***		143
São Paulo		***	***	47,878	7,327
Paraná		1.04		15,329	1,507
Santa Cathar	ina		400	19,955	1,186
Rio Grande	do Sul	***		11,542	3,214
Minas Gerae	s	4 8 4		3,1980	8,040
Goyaz		***	***	8,623	396
Matto Gross	0		***	6,511	1,170
Tot	als			192,055	33,521

Viação Ferrea do Rio Grande do Sul

In a recent interview with representatives of the press, some details of the new line about to be built from Rio Negro, in the State of Paraná, to Caxias, in the State of Rio Grande do Sul, were given by Colonel Borja Buarque, O.C., 2nd Railway Battalion in charge of the work. The first project for a line from Rio Negro to Caxias was drawn up by cadets from the Army Headquarters College in 1916 when a detail survey was made. In 1919, the Federal Inspectorate of Railways carried out a new survey covering 763 km. but, except for serving as a general outline for the project now in hand, it has proved of little value, as it was based on curves with a minimum radius of 150 m., whereas the new plans have had to conform to specifications permitting nothing sharper than curves with 300-m. radius, and a ruling grade of 1.5 per cent. (1 in 66.7), in accordance with the conditions established by the National Railways' Broad Gauge Rules. The difficulties which such a modification of policy has entailed are many and obvious.

Leaving the Rio Negro at the town of the same name on the north side, and Mafra on the south, in the States of Paraná and Santa Catharina, respectively, the line will cross the latter State via Itaipolis, Camoinhas, Papanduva, and Lages, and the State of Rio Grande do Sul via Vaccaria, and Antonio Prado to Caxias. The alignment will run generally parallel to the great mountain range, Serra do Mar, and traverse the Serra do Espigão until, at Lages, it will cross the rugged valleys of the rivers Pelotas and Antas before arriving at Caxias.

Earthwork was begun in March of last year, and 15 of the first 52 km. in hand are already finished. The total length of line has now been appreciably reduced as compared with the 763 km. of the survey of 1919, but how far the shorter alignment will affect the number of tunnels, bridges and viaducts is not vet known. The former survey included 40 tunnels and 283 viaducts and bridges, some of large dimensions, such as those over the rivers Camoinhas, Caxias, Pelotas, and Antas, the section on the Serra do Espigão accounting for 17 tunnels and 39 viaducts. The whole railway is expected to cost more than half a million contos of reis.

CANADA

Closing of C.P.R. Branch Opposed

The proposed abandonment of the Wolseley-Reston branch of the Canadian Pacific Railway in Saskatchewan is meeting with most determined opposition from the residents of the area served by it. A committee representing every town and village has been formed and a solicitor is to be appointed to prepare a case for presentation to the Board of Transport Commissioners when the application for permission to close the line comes before it.

Preliminary C.P.R. Financial Report for 1939

The latest report of the Canadian Pacific Railway Company, covering December operations, indicates that the total gross revenue for the full year 1939 was the highest since "the optimistic 20's," and that net earnings also touched a new peak for the current decade. The report shows that gross earnings were \$151,280,000 or \$9,021,000 higher than in 1938, and that the net income of \$28,523,000 was some \$7,771,000 higher than in 1938, when it stood at \$20,752,000.

Heavier grain traffic, due to the bumper crop in the West, was responsible for most of the general improvement in traffic, for, despite some exceptionally good months during the first half of the year before the crops began to move, the gain in net revenue for the first six months was only some \$2,600,000 compared with total year's advance of \$7,771,000. The detailed December report suggests, however, that the C.P.R. was then gaining from heavier traffic in goods other than grain.

Longer Hours for C.N.R. Shopmen

Owing to increased business and to expected considerable further increase in traffics, the Canadian National Railways are considering an increase of 10 per cent. in all locomotive shopmen's hours, bringing them up to a 44-hr. week, so as to ensure the availability of a larger number of locomotives to meet the increase.

LATVIA

Results of the State Railways

The gross earnings of the State Railways last year totalled 43,900,000 Lats as against expenses totalling 38,500,000 Lats, but the net profit of 5,400,000 Lats failed to meet the 9,000,000 Lats interest on the capital of 406 million Lats invested in the State Railways. An official writer in the newspaper, Rits, points out that the State Railways are not run for profit. Capital interest and amortisation are not taken into account when the freight rates and fares are calculated, and for that reason rail transport facilities in Latvia are cheaper than in other countries.

Goods traffic is very heavy at the moment, and on an average 1,800 fully-loaded trucks are being handled daily, the figure occasionally having been as high as 2,700 trucks on single days. During the past season the railways carried 16,500 truckloads of sugar beet to the Latvian sugar factories.

NETHERLANDS

Signalling in 1939

Considerable quantities of work were carried out by the Signal Department of the Netherlands Railways in 1939. New all-electric power interlockings were brought into service at Watergraafsmeer also at Amstel station in Amsterdam, and the existing signal equipment at a large number of stations was altered and renewed, or simplified on sections of line closed to passenger traffic. Many changes had to be made in the Amsterdam district in connection with the re-arrangement of lines in and near the city. The abolition of the local lines station at Utrecht has necessitated altered signalling there.

On many sections where speeds up to 120 km.p.h. (75 m.p.h.) are allowed, distant signals have been re-located. The "normally free" block apparatus has been replaced in many places by the "normally locked," and numbers of level crossing warning equipments have been installed. A new central tele

graph office has been opened at Rotterdam and telephone exchanges at various points. At Watergraafsmeer yard loud speakers have been installed for giving shunting instructions.

NORWAY

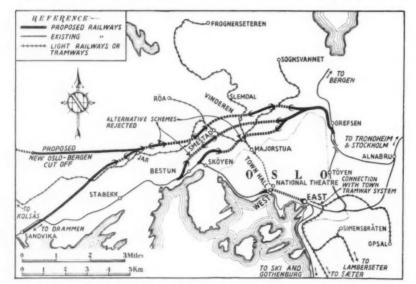
Railways at Oslo

As reported in The Railway Gazette of February 2 (page 144) the Oslo Central station committee, appointed in May, 1938, under the chairmanship of Herr Axel Granholm, formerly General Manager of the Swedish State Railways, to enquire into the possibilities of improving railway facilities at Oslo, has recently issued its report, a document containing 160 pages divided into eight chapters. It deals mainly with the present layout at Oslo and the history of its development, the traffic conditions at the existing stations, local traffic statistics, the committee's proposals, and the

finance thereof. Numerous schemes have been brought forward in the past, the latest of which was the subject of an illustrated article in The Railway Gazette of August 6, 1937 (page 235).

The committee's recommendation is that the existing East station should be retained and the West station abandoned, all traffic being dealt with at the former, which would be rebuilt and enlarged, with through lines on the north side giving access to a new double line tunnel under the city to join the Drammen line a little to the west of the present West station, and having a new city station near the quays and close to the new Town Hall (Rådhuset), as indicated on the map. The new tunnel would be approximately one mile long, and of course equipped for electric traction on the standard Norwegian State Railways system with overhead conductors supplying single-phase current at 15,000 volts. At the enlarged East station the goods loading and storing accommodation would be modernised and extended and a new marshalling yard built.

The committee carefully considered. among others, the scheme described in The Railway Gazette mentioned above in which an avoiding line was proposed to the north of Oslo from Grefsen to Sandvika where it would join the Drammen line, and other schemes proposing avoiding lines from Grefsen to join the Drammen line at Sköyen and at Bestun. These various suggested avoiding lines are indicated on our map, but the committee decided against them and in favour of the tunnel under the city, the cost of which, together with the various other alterations mentioned, would amount to about Kr. 47,500,000. A minority recom-mendation by Mr. Ferd. Bjerke, the author of the scheme described in THE RAILWAY GAZETTE mentioned above strongly recommends the building of the avoiding line north of the city between Grefsen and Bestun, largely because of its strategical importance



Sketch plan of the Oslo area showing the proposed new tunnel under the city and rejected alternative schemes

BELGIUM

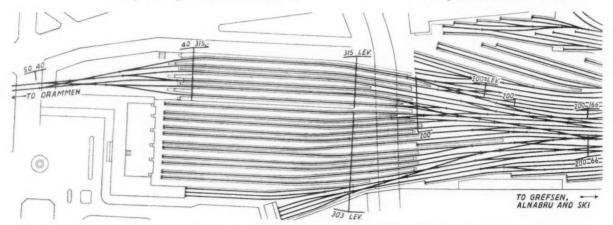
Ticket Collecting Abandoned

After prolonged experiments the Belgian National Railways have, since January 15, abandoned the practice of collecting tickets from passengers, except on international trains. Station exits are now free and passengers may retain their tickets as they do when leaving a tramcar.

BELGIAN CONGO

Transport Objects

In a recent speech M. de Vleeschauwer, the Belgian Colonial Minister, said that the transport system provided in the Congo must not only be aimed at carrying goods to the remotest parts, but by an intelligent co-operation of rail, river, and road services, must give the lowest possible rates. The permanent committee on transport, he said, now controlled 12,000 km. of rivers, 4,913 km. of railways, and 71,000 km. of roads.



Layout of proposed enlarged East station at Oslo, showing new through platforms for the proposed tunnel line under the city to join the Drammen line near the West station

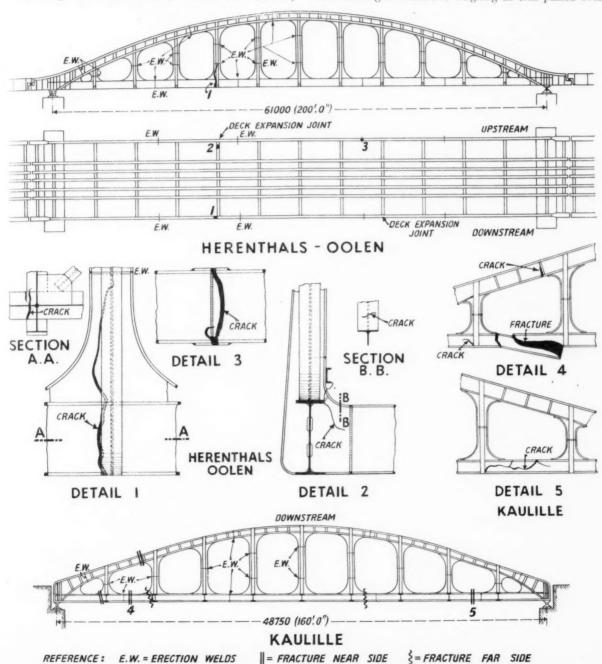
WELDED BRIDGE FAILURES IN BELGIUM

During the intense cold of last January two more of the all-welded Vierendeel bridges over the Albert Canal failed

OTES on the collapse of the all-welded bridge near Hasselt, Belgium, on March 14, 1938, were published in The RAILWAY GAZETTE of May 20, 1938, and August 11, 1939. During the recent spell of extremely cold weather two more Vierendeel bridges in Belgium have suffered badly and have had to be put out of service.

The bridge at Herenthals-Oolen is of 61-metre (200 ft.)

span, of the Vierendeel type, with parabolic top chord, similar in shape to many other bridges over the Albert Canal. It was erected in 1936-37, contains 395 tons of steel, and carries a road with a light railway upon it. On January 19 last, at about 2.30 in the morning, sentries guarding the bridge heard three loud reports; at 7.30 the same morning a locomotive weighing 23 tons passed over



the bridge, and it was only afterwards that engineers examining the structure found cracks in the lower chords, one of them opening to a width of about 1 in. and extend-

ing upwards nearly 7 ft. high.

In the first figure* the positions of the three cracks are indicated. It should be noted that the main failures in the lower chords (Nos. 1 and 3) did not occur opposite each other, otherwise the result of the accident might have been more serious. The bridge deck, including stringers and reinforced concrete slabs, was able to transmit a proportion of the total load, and thus, in conjunction with the upper chord acting as an arch, the lower chords were relieved to a large extent. Details of the three main cracks can be seen in the centre figures, one of which shows the main crack I having its starting point at the junction between the external stiffener and the vertical cornerjoint. It will be seen from figures relating to the other bridge that these joints were affected by cracks in a number of cases.

The bridge at Kaulille is of 48.75-metre (160 ft.) span.

* We are indebted to L Ossature Métallique for February, 1940, for the diagrams and notes in this article

It is older than both the Hasselt and Herenthals-Oolen bridges, having been erected in 1934-35, and had already given nearly five years' satisfactory service. The accident happened on January 25 last at about 7.30 in the morning. Here again the cracks occurred mainly in the lower chords, of which portions broke away, as indicated in the bottom figure. One of the lower chords contains four cracks, another crack is to be found in the opposite lower chord, and a sixth crack in the top chord, leading to a settlement of the end portion of the main girder near its pendulum bearing.

Both these bridge failures happened in a period of extraordinarily cold weather, to which, probably, they were partly due. A number of the cracks described started at the junction between external vertical stiffeners and the lower chords of the main girders. These points may be assumed to have shown stress concentrations.

Nothing has been heard of the final report which was to be published by the Belgian authorities on the causes of the Hasselt bridge failure, but a report on tests carried out in this country with steel specimens taken from the Hasselt bridge may be expected, and this should make it possible to arrive at definite conclusions.

The Railways of the U.S.A.

THE 53rd annual report of the Interstate Commerce Commission, dated from Washington on November 1, 1939, again refers at some length to the transportation problem in the United States. The fundamental conditions have not changed since the last report. It is true that the earnings of the carriers have increased substantially in recent months, and the tendency of traffic was upward even before the outbreak of war in Europe, but it is delusive to suppose that this will in itself solve the problem, or render unnecessary all constructive attempts to deal with it. The improvement in business that war brings is temporary and conditions in the after-math may be worse than before. The findings of the two committees appointed by the President in March and September, 1938, were not implemented. A report was submitted by the Interstate Commission on March 20, 1939, discussing at length the proposals of both the "Committee of Three" and the "Committee of Six. Bills are now before both Congress and Senate and it remains to be seen what form will be given to these in the committee stages. All classes of transport agencies reporting to the commission (except express companies and motor carriers of passengers) experienced a decline in operating revenue in 1938, in comparison with 1937. The estimated aggregate 1938 revenues amounted to \$6,087,862,750, which was 12 per cent. below the corresponding 1937 total. For all Class 1 steam railways, excluding switching and terminal companies, the principal statistical operating figures are compared in the following

		1937	1938
Route miles open		238,539	236,842
Passenger and freight train m	iles	918,489,711	815,638,000
Passengers carried		497,288,000	452,731,000
Passenger miles (thousands)		24,655,414	21,628,718
Freight revenue, tons		1,825,342,000	1,399,259,000
Freight revenue ton-miles (thou-		
sands)		360,620.269	290,084,371
Operating ratio, per cent		74.87	76.35
		8	S
Passenger revenue		442,518,000	405,598,000
Freight revenue		3,370,959,000	2,852,112,000
Total operating revenue		4,166,068.601	3,565,490,883
Operating expenses		3,119,064,932	2,722,228,766
Tax accruals		325,665,199	340.779,786
Equipment and joint line rent	· · · ·	131.134.574	129,436,017
Net railway operating income		590,203,896	372.846.314

To the net railway operating revenue "other income" is added, amounting in 1938 to \$155,266,900, and interest. rents, and other charges, aggregating \$651,023,334, are deducted, leaving a net deficit of \$122,911,784, which compares with the surplus of \$98,671,034 in 1937. Total railway capital outstanding was \$21,428,320,000, of which \$11,639,907,000 represented funded debt unmatured, and \$9,788,413,000 represented stock; the ratio of debt to capital was thus 54.3 per cent. A table in the report shows that the ratio of net income to stock has fallen from 9.92 per cent. in 1929, to 1.49 per cent. in 1937, and to a minus quantity in 1938. On July 31, 1939, the 108 railways in receivership or trusteeship accounted for 76,703 miles of road operated, or 30.70 per cent, of the entire railway mileage. During the year ended October 31, 1939, 121 applications were filed for permission to abandon 2,562 miles of railway, or the operation thereof. Actually there was a reduction in 1938 of 1,697 miles in the total route mileage since the previous year; the reduction since 1929 amounts to 12,591 route miles. The decrease in the number of locomotives continues, the total of 46,544 engines in service at the close of 1938 (including switching and terminal companies) comparing with 47,555 in 1937, and 61,257 at the close of 1929, although the average tractive effort (on Class 1 steam railways) has increased from 44,801 lb. in 1929 to 49,803 lb. in 1938. During the same period the number of freight cars fell from 2,323,683 in 1929, to 1,776,428 in 1937, and 1,731,096 in 1938, and the number of passenger cars from 53,838 to 40,939 and 39,931, excluding privately-owned cars and Pullman cars. In 1938 privately-owned freight-carrying cars numbered 285,069, and cars owned by the Pullman Company 7,578. The average number of employees, which was 1,660,850 in 1929, had fallen in 1938 to 939,171, but the total wage bill, which had represented 46.13 per cent. of revenue in the earlier period, now accounted for 48.97 per cent.

The revival in traffic, in 1939, has affected both freight and passenger services. Freight car loadings in September averaged 768,872 cars a week, or 18.5 per cent. in excess of the weekly average in September, 1938. The outbreak of war in Europe has already had a tendency to increase railway traffics, and the railroads are speeding up repairs

and have ordered much new equipment.

ROAD TRANSPORT SECTION

This section appears at four-weekly intervals

Road Accidents

THE problem of road accidents is not new and is not confined to Great Britain. It exists in every country where extensive use is made of mechanical road transport, and in 1895, the year in which the use of motor vehicles on the roads of this country was legalised, over 1,600 deaths in Great Britain were attributed to horses and road vehicles. Naturally, with the intensive post-1918 use of motor vehicles, the total of road accidents increased very *considerably, despite speed restrictions and extensive "safety first" propaganda. In 1934 7,343 persons were killed and over 231,000 injured; the former was the highest figure thus far recorded, and fortunately, it remained unsurpassed until the outbreak of the present war. Legislative measures, such as the 30 m.p.h. speed limit in built-up areas, the institution of driving tests, and the establishment of pedestrian crossings, at any rate checked the growth of the accident figures, despite a constant increase in the number of vehicles on the roads. Thus, while the number of motor vehicles increased by 28 per cent. between 1934 and 1938, the accident figures remained steady from 1935 to 1938 inclusive at a little over 6,500 killed and 220,000 injured. The outbreak of war, with the enforcement of rigid blackout regulations, has now resulted in such a large increase in accidents during the hours of darkness that the year 1939 finished with a total of 8,270 fatalities as the result of road accidents-the highest figure recorded. The contribution of the last four months of the year to this total was 4,133, a figure which is analysed in our article on "Road Transport and the War" at page 344. The following table shows the numbers of persons killed or injured in Great Britain as the result of road accidents during representative

		Nu	mber	No. of motors (including
Year		Killed	Injured	motorcycles)
1895	 	 Over 1,600	Not available	Not available
1927	 	 5,329	148,575	1,899,650
1930	 	 7,305	177,895	2,287,326
1931	 	 6,691	202,119	2,213,722
1934	 	 7,343	231,603	2,416,908
1938	 	 6,648	226,711	3,093,884
1939	 	 8,270	Not available	Not available

U.S.A. Passengers by Road, Rail, and Air

SOME striking proportionate figures of passenger traffic in the United States of America for the year 1936, necessarily estimated but probably substantially correct, were given by Mr. H. Young in an address before the New South Wales members of the Institution of Locomotive Engineers at a meeting held at Sydney last year. He said that, measured by passenger miles, the total passenger traffic of the U.S.A. was roughly as follows:

					Passenger miles in billions	Percentage of total
Private motorca	rs		***		428	85
Electric traction	raily	vays	***		30	6
Steam railways					22	4
Motorbuses					19.4	4
Aeroplanes		***		***	0.44	1

Railway passenger miles increased from 29 billions in 1908 to 32.5 billions in 1915 and to 47.3 billions in 1920.

Then followed a sharp reduction, when in 1933 the passenger miles reached the relatively low figure of 16·3 billions. This declining trend was arrested in 1934. There was an improvement in 1936 to 22·5 billion passenger miles. The sharp reduction since 1921 in passenger business has been largely due to the diversion of passenger traffic to motorcars and motorbuses. Railway authorities, of course, have been trying to recover a portion of the traffic by reduced rates, faster timetables, and improved service and equipment. In Mr. Young's view, the increased cost of motor transport in the United States brought about by higher licence fees, fuel taxes, etc., will tend to reduce the volume of travel by these agencies.

R. E. B. Crompton

REW engineers have had such a lengthy, diverse, and distinguished career as the late Colonel Rookes Evelyn Bell Crompton, who died at Ripon on February 15 in his 95th year. He was a pioneer, alike in military engineering, electric lighting, and mechanical road transport, and the last-named sphere held his interest for three quarters of a century. Colonel Crompton, who was born at Sion Hall, Yorkshire, on May 31, 1845, visited the Great Exhibition in Hyde Park in 1851 and years afterwards said: "the focus of the whole exhibition was the machinery hall. There I dragged my mother, and there I would willingly have stayed." He began a Service career at what would now be regarded as a very tender age, for he served in the Crimean War as a naval cadet. Later, while on holiday from Harrow School, in 1860, he is credited with fitting up a machine lathe and building a full-size road traction engine. His Army career began in 1863, and he went to India the next year. Crompton was seconded for special service as Superintendent of the Government Steam (Road) Train Department, and in this capacity carried out the first great experiment in mechanical road transport, when the authorities in India wished to test the possibilities of motor transport on the great trunk roads as compared with narrow-gauge railways. Reading in 1868 an account of the remarkable hauling powers exhibited by a road steam tractor built by R. W. Thomson, a pioneer of both the pneumatic and the solid rubber tyre, Crompton wrote asking for a set of tyres. Thomson's reply was to offer to supply a complete road steamer, and the results obtained in India with this machine were so good that the Government sent Crompton to England to superintend the construction of several more Thomson tractors. The Chenab (Government Steam Train No. 2) on test in England attained a speed of over 30 m.p.h. This was a 3-wheel traction engine hauling a 2-wheel covered-top double-deck trailer, lettered "Jhelum and Rawulpindi. New Favorite." It is not too much to say that Crompton introduced mechanical road transport to India during the period 1870-75. On returning to England in 1876 he found the public and the engineering world generally so disinterested in road motor transport that he turned his energies to a diversity of engineering problems and eventually concentrated on electric lighting. He founded the firm of Crompton & Company in 1878.

Crompton went to South Africa during the Boer War, primarily as an electrical engineer, but he was also advisor to Lord Roberts on transport matters, and super-

vised general mechanical road transport arrangements, of course by steam traction engine. After that war he devoted a great deal of time and attention to the question of road surfaces, and his work took him to Hamburg, Madrid, Rome, and various parts of France as an adviser. On the formation of the Road Board in Great Britain in 1910, Crompton was appointed its consulting engineer, a position he held until the board was merged in the Ministry of Transport. In this capacity he was responsible for the greater part of the experimental work which preceded modern road developments, and had much to do with the inception of the system of tarring road surfaces to lay dust. During the war of 1914-19 Mr. Winston Churchill asked Colonel Crompton to look into the possibilities of "landships," and by March, 1915, the design was sufficiently advanced for Mr. Churchill to sanction the construction of a dozen; it was from these vehicles that the eventual design of the tank emerged. Crompton was twice President of the Institution of Electrical Engineers (1895 and 1908), first President of the Institution of Automobile Engineers, and one-time President of the Junior Institution of Engineers. In his address to the last-named body he went so far as to suggest that the progress of a community should be measured by the development of its roads rather than of its railway system. Among the many activities of a very full life, Crompton also found time to take a prominent part in the organisation of the Commercial Motor Users' Association (of which he was Chairman), of the Royal Automobile Club (of which he was an original Founder Member, Vice-President, and Deputy-Chairman), and of the Roads Improvement Association (of which he was Vice-Chairman).

Glasgow Transport and the Cold Spell

SOME interesting particulars of the effects of the snow and frost on Glasgow Municipal Transport were given recently in a report by Mr. R. F. Smith, the General Manager, the primary object of which was to rebut charges of inefficiency that had been levelled against the Glasgow Municipal road transport service. Mr. Smith stated that glycerine was added to all bus radiators before the first cold spell at the New Year and regularly thereafter. Engines were kept warm during the severe weather by being started up at regular intervals during the day and night, and a considerable amount of the fuel reserve of the undertaking was absorbed by that important precaution. The chief cause of the hold-up of the buses during the time when the minimum temperatures were experienced was found in the fact that the corporation ran its diesel buses on Scottish shale oil. At the temperature experienced that fuel threw a wax deposit, choking the filters and fuel injection mechanism, and bringing the buses to a standstill. Owing to the large number of buses affected, it was some time before they could all be removed from the streets. The actual stoppages directly due to frost were small in comparison with those which were attributed to the fuel, a circumstance entirely beyond the control of the management. After the snowfall, too, the frozen conditions of the roads resulted in numerous broken springs and radiators, and the salt on the roads also attacked the aluminium valves of the brakes. When the snowfall began, immediate steps were taken to maintain the tramway services. On the first night 24 snow ploughs and 35 salt wagons, manned by 275 men, were employed all night clearing the car tracks. In addition, 530 permanent way men were on constant duty salting and keeping clear 520 points, junctions, and crossings, and this routine was continued as long as the snow lasted. During this period 258 tons of salt and 1,100 tons of grit were spread on the streets by the Transport Department. Tramcars, too, became defective for reasons over which the management had no control. From January 21 to January 31, 624 cars were withdrawn with frozen air brakes, while the salt on the streets attacked the equipment of the cars, and snow on the lifeguards caused a large number of these to be damaged. There were 570 cars repaired at the car works from January 13 to February 10 due to frost and snow.

West Virginia Transport

THE working arrangements between the West Virginia Transportation Company, a bus subsidiary of the Baltimore & Ohio Railroad, and its parent concern, and much closer than is usual in developments of this kind the U.S.A. Its lines largely parallel and supplement those of the railway in West Virginia and that this policy has given good results is evident from the fact that not only have the bus company's operations been satisfactory but they have enabled marked savings to be made through greater efficiency in railway operation. This has applied more particularly to branch lines. The Railway Age more particularly to branch lines. states that as a result of the recent extension of the bus service between Parkersburg and Petroleum, a distance of 30 miles in which the bus route parallels the B, & O. main line, and serves the local stations, it has been possible to eliminate eight stops on one train schedule, which cousequently has been accelerated by 30 min. No attempt has been made to invade the territory of other railways, but, with independent bus companies in its own districts, the West Virginia Transportation Company has adopted a policy of co-operation rather than rivalry. By the arrangement of joint schedules it has been possible to provide a better public service and to effect considerable economies. The company's vehicles are kept in very good order, as indeed is essential to maintain the company's excellent safety record over the difficult mountain territory it serves. Apart from its passenger business, the company derives revenue from carrying newspapers and a wide variety of small parcel freight. Deliveries are usually made to the bus stations, but in certain cases goods are delivered at the stores along the route. These packages pass under a simplified system of stamping, according to weight, and the need for waybills is eliminated, thus reducing clerical work to the minimum.

Motive Power Vagaries in Holland

FEW railway-associated transport undertakings can have had such a wide variety of motive power within a short time as the Gooische Tram Company, an associate of the Netherlands Railways which links Amsterdam with the towns of Baarn, Hilversum, Naarden, and Muiden, to the east of the Dutch capital. According to an article by Mr. Ernest Friedlænder in our contemporary Bus & Coach, this line, running along the side of the road, was operated until 1925-28 by steam trams, and conversion of the trams to petrol power was undertaken over this period of three years. Hardly was the conversion complete than a comparatively high tax on petrol was introduced, and almost at once the replacement of the petrol engines with others of the diesel type was necessary in order that the company might maintain its services without incurring financial loss. The Krupp-Junkers two-stroke opposedpiston engine was chosen as the power unit. Unexpected competition from private bus undertakings prevented full benefit being reaped from the oil engines, and in 1938 the substitution of oil-engined road buses was begun, in order to quicken up the timings and give a service equal to that provided by the private bus owners, whose activities had by that time been restricted by legislation. The length of the full stage is 201 miles and the average speed of the 15-min. service is 20 m.p.h., inclusive of 28 intermediate

Producer-Gas for Commercial Vehicles

Continuation from p. 185 of the February 9 issue of an article describing regulations, the fuel position, and various types of equipment

By BRIAN REED

N order to assist the fullest benefit being derived from producer-gas vehicles, the Ministry of Transport on February 24 sanctioned an increase in the petrol Tation for such vehicles from one-sixth to one-half of the normal issue, and the same increase is to be available for vehicles running on low-pressure or high-pressure town gas. This arrangement is to remain in force for six months, and a review of the position is to be made before the expiration of this period. The new arrangement will not affect the right of operators of gas and producer-gas vehicles to apply for supplementary rations of liquid fuel for approved work for which these methods of propulsion are unsuitable.

Producer-Plant Construction

Speaking at the annual meeting of Thomas Tilling Limited on February 15, Mr. John F. Heaton said: "As far as the present emergency is concerned, we have had in hand at our Bristol works since before the war the materials for manufacturing approximately 600 producergas plants, and as we cannot complacently anticipate that supplies of imported fuel will continue to be available in existing quantities, we have put in hand the manufacture of this number. They will not go far in our organisation, but in case of need the number could be added to if raw materials were available.

The works referred to are those of the Bristol Tramway & Carriage Co. Ltd., which organisation already has had some months' experience of producer-gas propulsion, including installations of the Ministry of Mines producer, as noted in the instalment of this article published in The Railway Gazette dated November 17, 1939.

Fuel Position

There is no indication that the increase in producer-gas fuel prices has reached its "ceiling," and prices as high as 96s. 8d. a ton for low-temperature coke in bags have been quoted. Anthracite fuels now appear to be well over 90s. a ton, although five months ago the price was 56s. a ton. Arising from the comments on fuel prices made in this article in the issue dated February 9, Mr. John Holder, Director of Dupuy Gas Producers Limited, has sent a copy of the letter addressed by his firm to the Under Secretary for Mines, dated January 29, drawing attention to the enormous increase in the price of anthracite fuels being effected by the Amalgamated Anthracite Collieries Limited, of Swansea. On September 21 last the quoted price of Progasite in 56-lb. sacks loaded in wagons and sheeted was 52s. 6d. a ton at the colliery in minimum lots of 7 tons, equivalent to one wagon load, with a credit allowance of 5s. a ton for returned sacks. By January 22 of this year the price had risen to 90s. a ton delivered to the nearest station in full wagon loads. Wet Progasite, containing 6 to 10 per cent. of moisture, advanced from 41s. 4d. per ton at the pit to 90s. per ton delivered at nearest station between December 4 and January 22, the difference of 48s. 8d. being, apparently, to cover the cost of transport from pit-head to dealer, and an allowance of 10s. a ton to the dealer.

According to the report of the government committee on producer gas, the quantities of anthracite and lowtemperature coke which could probably be made available would be enough for nearly 10,000 vehicles, but it does not seem to be of much use having the right quantity of fuel at a wrong price.

In a letter published in the Glasgow Herald dated

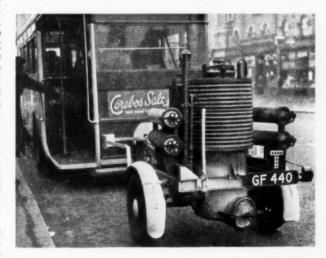
In a letter published in the February 23, the Duke of Montrose says: "Your correspondent refers to the Government-designed plant'; this is a composite design embodying patents and ideas of several private firms. Prior to this war-emergency design the Government itself had no mobile gas-producer experience to work upon. It is still an open question what indemnity the Government may be able to give to manufacturers of the Government design in the event of possible trouble over infringement of patents I do not anticipate private manufacturers will be found unreasonable in this matter.

"I note reference to Progasite as a suitable gas fuel; this is a product of Welsh anthracite producers. I am hoping the Scottish anthracite producers will get together and soon produce something similar. . . These other fuels cost 17s. to 20s. a ton to fetch up to Scotland. Suncole is probably the best fuel of all; it is a low-temperature carbonisation product from Nottingham. In my evidence before the Scottish Oil from Coal Committee I remarked that Suncole even better than that produced in England had been produced by the same process from Fife coal. The committee at that time turned the idea down as a non-economic proposition; but it was then visualising a market price of 23s. a ton at the works. Today it is more like 50s. or 60s. a ton."

Government Committee's Report and Plant

The Committee on the Emergency Conversion of Motor Vehicles to Producer Gas, set up by the Government in 1937, issued its report in February. The work done was confined to emergency conversions and did not include new vehicles. Tests and observations were made over a service mileage of 170,000, and of this total 50,000 were special Fuel Research Station tests with nine vehicles and covering nine producer types and 120 brands of fuel. The report emphasises the desirability of suitable fuels and adequate filtering, and specifications of anthracite and low-temperature coke fuels are included.

A producer for conversions was designed by the committee, and is of the cross-flow type with the inlet tuyere and the outlet opposite to one another close to the bottom of the producer. As shown in the accompanying drawing, the tuyere is water-cooled, the supply



Ministry of Mines producer behind L.P.T.B. double-decker

of liquid being taken from a tank surrounding the hopper. The producer comprises a thin steel shell about 54 in. high and 18 in. in diameter, and the upper part is surrounded by an annular tank with a corrugated exterior. The producer is fitted with a fuel charging door on top of the hopper, an ash-discharging door at the base, the air intake tuyere, and a gas outlet with protective grid which prevents large particles of fuel being drawn through to the filters. Mild steel plate is used throughout and every endeavour has been made to obtain a simple design, but as the plant is intended specifically for production in quantities, large use has been made of pressings.

A trailer is favoured mainly as a matter of convenience in conversion, and normally it contains, in addition to the plant itself, four cylindrical coolers and two vertical filters in which beds of sisal tow are used as the filtering medium. The cooled and filtered gas is introduced into the engine induction system between the inlet manifold and the petrol carburettor. This carburettor is retained unmodified except that the throttle is equipped with hand control, but a gas throttle is fitted and is controlled

by the accelerator pedal.

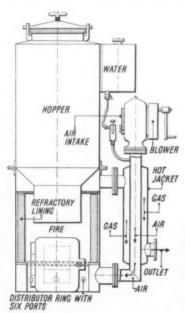
Other aspects of producer-gas propulsion considered in the report (obtainable from H.M. Stationery Office; 9d. net) are the operation of vehicles, comparison with petrol engines, cylinder wear, attachment of the trailer to the vehicle, the controls, and the importance of correct manufacture.

All-British Producer

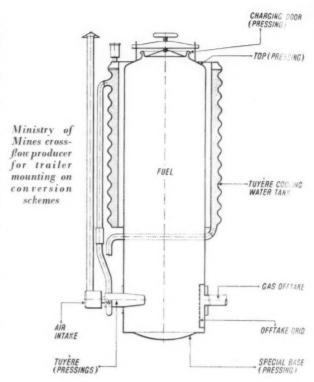
In the instalment published in the issue of The Railway Gazette dated February 9 the writer credited the H.S.G. producer with being the only all-British design, quite overlooking the fact that the Koela types of producer are developments of the work of the Parker brothers, who took out British patents for producer-gas plants applicable to motor vehicles as long ago as 1901. From that time onwards all the development has been carried out in this country, and embraces up-draught, down-draught, and duo-draught types. The word "Koela" is understood to be an Indian word for charcoal.

Producer Types

The issue of February 9, 1940, illustrated and described the various designs of cross-draught producers on the British market. Below are given some notes on the



Koela up - draught producer-gas plant, which like other updraught types, gives gas of good quality. The hand-operated blower is used at starting



three remaining general types, namely, up-draught, down-draught, and dual-draught. The principle adopted depends a good deal upon the volatile content of the fuel; for example, the down-draught type appears to show to best advantage with tarry or dirty fuels. A prominent feature which will be appreciated from the table on p. 183 of the February 9 issue is that all the makes now being used in British road practice, with one exception, are of the cross-draught type, whereas none of the Continental makes is built on this principle. The British plants burn mineral fuels, but charcoal and wood are the favourite fuels on the Continent, although such types as the Deutz and Wisco can burn mineral fuels. The one British exception to the cross-draught rule is the Brush-Koela dual-draught plant, for the up-draught and down-draught producers of the same make do not appear to be used in modern practice.

Koela Up-Draught Plant

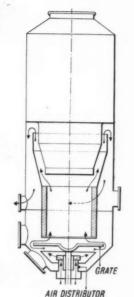
A refractory lining is used in the bottom of the producer cylinder and extends upwards a little higher than the bottom of the hopper. Air is led into the bottom of the furnace—or forced in by a blower at starting—through an annular chamber with six distributing ports, and the gas is led off just above the refractory lining through a perforated plate. The gas outlet surrounds the air inlet pipe and forms a preheater, and at the same time assists in vaporising the small supply of water which is fed into the air just below the blower; conversely, the incoming mixture of air and water gives the outflowing gas a preliminary cooling.

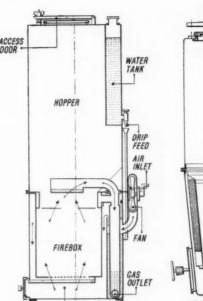
Foreign Up-Draught Plants

Four of these, the Hansa, Wisco, Malbay, and C.G.B. are shown diagrammatically in accompanying illustrations, taken from the paper "The Modern Portable Gas Producer" read before the Institute of Fuel in December, 1938, by Messrs. Bosworth Goldman and N. Clarke Jones. In the Hansa type the air is led in at the bottom through

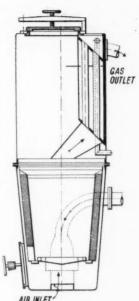
Near right: Diagram of Malbay up draught producer showing up-and-down flow of air and gas

Contre: The French C.G.B. updraught plant with watered air injection





ASH PAN



Far right: The German Hansa up-draught plant, with simple furnace construction

a central pipe, and the gas is led off from the furnace through a single funnel and then is divided before entering the gas outlet pipe. A more complicated flow is followed in the Malbay plant, the air going up through the furnace, then, as gas, through an annulus between the upper portion of the furnace and the lower portion of the hopper, and finally reversing its direction to flow downwards, through an annulus formed between the furnace and the producer cylinder, before being drawn off at the gas outlet. The C.G.B. producer also incorporates an upward flow of air and a downward flow of gas, but the air flow itself is first downwards from the fan to the grate, and the air picks up some water from the jacket round the gas outlet. The water level is maintained by a drip feed from a tank in the top part of the hopper. The Wisco producer is rectangular in plan, but the gas direction is a little simpler, the air coming up through the grate and the gas being

led off from the side of the furnace. But the air first has a reversal of direction when picking up water, or steam, from what is in effect a small boiler surrounding the hottest part of the furnace. It is claimed that some superheating is given to the air-steam mixture at the bottom of the furnace, where it passes over the refractory lining.

Down-Draught Plants

The down-draught type does not give such a good gas.

The down-draught type does not give such a good gas mixture as the up-draught pattern, but can give better working results with certain inferior fuels. Six types—the Delvaux, Imbert, Koela, Panhard, Hurley, and Fiat—are illustrated in this article. The Koela plant is akin to the up-draught plant of the same make, but with the flows reversed and a suction fan incorporated instead of a blower; the water is supplied to the air at the elbow of the intake pipe and does not flow in the same direction as the air, as it does in the up-draught model.

WATER TANK FAN GAS OUTLET GRATE AGITATOR SHUT-OFF VALVE ASH DOOR GRATE

The Wisco up-draught plant with water-cooled furnace

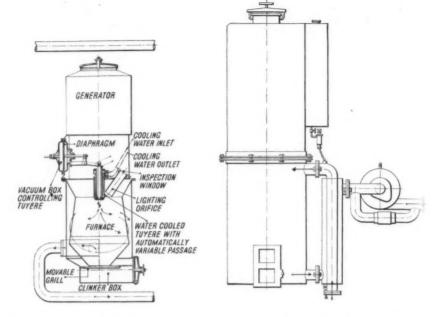
Imbert Plant

The Imbert plant is to a well-known design made in Germany, Italy, and France under licence, the constructors including De Dietrich and Berliet. Wood and charcoal are the fuels used. The upper portion of the producer comprises a container charged from the top, and from which the fuel works downward through the hopper into the furnace. At the bottom of the hopper the air is introduced through horizontal tubes. The gas passes downwards, and at the bottom, where the flow is reversed to an upward direction, any tarry products are removed through the bottom access doors. After passing up the annulus dividing the producer walls from the furnace and the hopper the gases are led off horizontally. The valve in the air inlet is to obviate blow-back. No refractory lining is used.

Panhard System

The Panhard down-draught producer, designed specifically for charcoal, has certain complications. For example, the air is introduced through a horizontal tuyere and circulates in an annulus between the outer shell and refractory lining before being led into the combustion zone at the base of the fuel hopper. This arrangement reduces the velocity of the air flow. Below the nozzle of

Near right: The Belgian Delvaux down-draught producer plant, a feature of which is the automatic regulation of the air

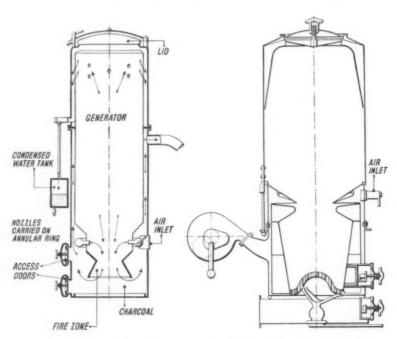


Far right: The British Koela down-draught plant with water injection and a suction fan for the air. For road application this type and the up-draught plant of the same make are superseded by the Brush-Koela duo-draught system

the fuel hopper the furnace widens sharply and then contracts gradually down to the hemispherical grate, which, incidentally, can be rotated by means of a handle below. A recent improvement is the introduction of an additional vertical tuyere for use in promoting a quick start.

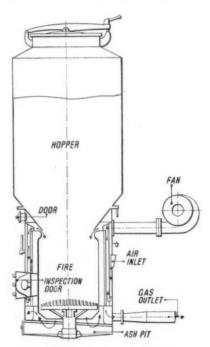
Delvaux Producer

In this down-draught plant a strong endeavour has been made to get the air directly to the centre of the combustion zone, and a vertical water-cooled tuyere is led into the top of the furnace. The gas is drawn off from the lower part of the furnace. In view of the position of the tuyere ample water cooling is necessary, and as a rule a small radiator is provided to cool the water circulating round the tuyere. It is claimed that the nozzle of the tuyere can be cleaned during the operation of the plant by inserting a cleaning rod through the lighting orifice. The air supply can be regulated by hand, but there is also a form of automatic regulation, in which use is made of a diaphragm in a vacuum box connected to the engine

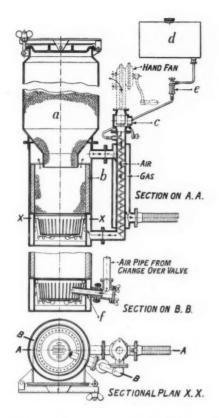


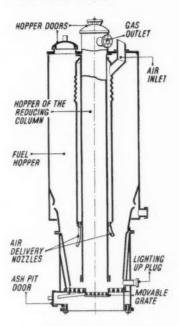
Section through the French Imbert down-draught producer using wood and charcoal fuels

Panhard charcoal-burning downdraught plant with hand-operated suction fan



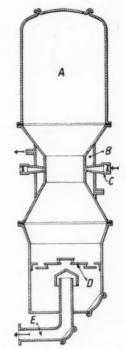
The Fiat down-draught plant with hopper sloping directly into the furnace





Above: The Brandt wood burning double-draught plant Left: The latest form of Brush-Koela duo-draught plant incorporating cross and up-draught

principles



Diagrammatic section through the recentlypatented Hurley downdraught producer

induction system and operated from a venturi. Special attention is given to cooling and filtering of the gas in the Delvaux plant.

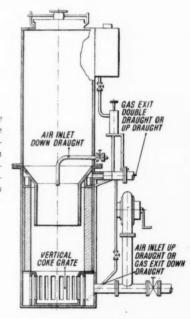
Hurley System

A recent patent taken out by Mr. T. Hurley, of the Fuel Research Station, covers a down-draught producer intended particularly for fuels having a high ash-content, and also the use of water or creosote injection during sustained periods of maximum load. The hopper A narrows to a central throat surrounded by a water jacket B piped to the engine cooling system. Air enters the producer through a ring of tuyeres C fitted with flap valves to prevent blow-back. Below the grate D is the gas outlet pipe E, which is hooded at the top, but the patent also covers a position above the grate. The grate comprises fixed and movable bars, and the latter are shaken by the relative movement between the road wheels and the chassis.

Brush-Koela Duo-Draught Plant

In this plant cross-draught is used for starting, the intake air passing through a nozzle (see section through BB in the drawing) into the centre of the grate; the nozzle itself forms a hot spot. Cross-draught gives a rapid start, and the vehicle can be run on the gas so generated until the fire has spread. The cross-draught tuyere f is made of a silicon-carbon compound, claimed to be able to withstand a temperature of 1,800° C., in order that water cooling may be avoided. When the fire has spread a change can be made to up-draught working by operating the change-over valve c on top of the preheater. A water drip is started from tank d through the valve e so that superheated steam and air are fed through the preheater to hold the fire-bed temperature below the fusing temperature of ash; thus clinker formation is

Section through the early form of the Brush-Koela doubledraught producer in which either updraught or downdraught principles could be used



avoided. From the outlet, located at the level of the conical hopper, the gas is led round the outside of the air preheater where it is given a preliminary cooling. Fuel is charged into the producer cylinder a, and the furnace has a refractory lining b. An earlier form of Koela double-draught plant was designed to operate on either up-draught or down-draught principles, the gas and air passages being reversed according to the system in use, as indicated in the last of the sectional diagrams reproduced on this page.

Road Transport and the War-6

The blackout and mortality on the roads—The motor industry and war orders—Callender-Hamilton unit-construction emergency bridges—Town gas for road transport vehicles—Urban transport in Europe

During the last four months of 1939, 4,133 persons died as a result of road accidents in Great Britain, making a total of 8,270 for the year, the highest ever recorded. All but a tiny fraction of the increase has taken place since the beginning of the war and there is no doubt that the increase is due to the difficulties which all classes of road users encounter in going about in the blackout. Out of a total of 1,155 fatalities in December, no fewer than 895 resulted from accidents in the dark. Pedestrians account for seven-eighths of the total increase in the number of persons killed since the outbreak of war, but it is pleasant to be able to record that the increase in the number of children under 15 years of age killed has not been marked; probably evacuation may be credited with this satisfactory aspect of a generally regrettable position. Elderly and middle-aged pedestrians appear to have supplied large proportion of the victims, and the thought naturally arises that the avoidance by such persons of unnecessary night excursions would materially alleviate the heavy strain on drivers and also reduce considerably the accident figures. The numbers of persons who died as a result of road accidents in 1939 since the outbreak of war (namely, the months of September to December, 1939) with increases and percentage increases over corresponding period in 1938 are:

Clas	sificatio	on	Number. 1939		or — compared with 1938				
						N	lumber	Per cen	er cent.
Pedestrians :						1			
Under 15 years of		***	188	***	293	1	23	-	8-52
15 years of age an		***		***	2,364	1+	1,411		148 - 06
Drivers of mechani			vehi	cles					
other than mot	orcycle	\$			139	1 +	7		5 - 30
Motorcyclists	***	***		***	449	+	114	+	34.03
Pillion passengers	***	***	***	***	53		4	(800)	7.02
Pedal cyclists:									
Under 15 years of	age	***	***	2.64	75	1 +	7		10.29
15 years of age an		***	***	***	453	+	13		2.95
Other persons (main	nly pass	engers)	+×+	***	307	+	68		28 - 45
Totals		***			4,133	+	1,639	+	65 - 72

In respect of the last quarter of 1939, the Ministry of Transport divided the road accident fatalities into two main classes, namely, hours of darkness and hours of daylight, and has further classified the figures in the same way as in the previous table. The following is concerned with the numbers of persons who died as a result of road accidents during the three months October to December:—

Ct		g hours rkness	During other hours			
Classification	Number	Per cent. of total	Number	Per cent of total		
Pedestrians :		1				
Under 15 years of age	35	1.6	176	20.3		
15 years of age and over	1,593	74.7	220	25 - 4		
Drivers of mechanically-propelled ve- hicles other than motorcycles	51	2.4	53	6-1		
	150	2·4 7·0 0·7	116	13-4		
0:11:	15	0.7	6	0.7		
Pedal cyclists:	13	0.7	0	0.7		
Under 15 years of age	12	0.6	38	4-4		
15 years of age and over	178	8.3	152	17.5		
Other persons	100	4.7	106	12.2		
Totals	2,134	100-0	867	100 - 0		

Apart from the small improvements in street lighting that have been found permissible, the principal step taken by the Government, so far as the motor driver is concerned, is the imposition from February 1 of a 20 m.p.h. speed limit in built-up areas at night. The Minister of Transport has stated that he is satisfied that the requirement is not unreason-

able, as in general 20 m.p.h. in urban areas in the blackout is quite fast enough for all normal purposes, and the difference in speed between 20 m.p.h. and 30 m.p.h. makes it much easier for the driver to pull up and avoid a collision with an unwary pedestrian and for the pedestrian to get out of the way of an approaching car. It may also make all the difference between death and only slight injury. The most difficult problem to tackle is that provided by the pedestrian. It has often been suggested lately that the Government should control the movements of pedestrians by making it an offence for them not to use pedestrian crossings. Other proposals are that all pedestrians should be required to carry a torch, wear white armlets, or even white clothes. The Minister of Transport is not in favour of making failure to observe these excellent maxims of conduct into new Statutory offences, and holds the view that the toll of road casualties, in peace or in war, can best be reduced by the use of propaganda.

New Registrations of Road Vehicles in Great Britain

Some official figures are now available, showing the effects of the war on the road motor industry in Great Britain. The following table, compiled from Ministry of Transport returns, gives the numbers of mechanically-propelled road vehicles registered for the first time in Great Britain during the months of November and December, 1939, and January, 1940, compared with the figures for the corresponding months a year

ROAD VEHICLES: NEW REGISTRATIONS

Description	Nov., 1938	Nov., 1939	Dec., 1938	Dec., 1939	Jan., 1939	Jan., 1940
Cars taxed on horsepower Exc. Not exc.		2.477	14 005	2.404	17.710	4.15
10 h.p.	14,560 6,486	2,477 890	6,538	3,404 1,045	17,710 6,872	4,156
10 15 h.p. 15 20 h.p.	1,357	91	1,317	126	1.354	139
20 25 h.p.	593	33	604	36	619	48
25 30 h.p.	452	33	405	42	538	39
30 — h.p.	138	25	168	15	231	18
Miscellaneous	. 2	-	1		2	
Total	23,588	3,549	26,018	4,668	27,326	5,657
Cycles	. 2,560	1,196	2,178	707	3,232	895
Hackneys						
Exc. Not exc.						
8 seats		*	267	41	175	60
8 40 seats		*	77	37	145	69
_40 — seats	400	1	233	116	187	145
Total	. 490	189	577	194	507	274
Tractors	10	24		17	12	21
Agricultural		24	6	17	13	31
Showmen's	1.3	19	14	16	18	13
70	22	43	20	33	31	44
Total	4.3	73	20	33	31	-
Agricultural engines (51- class)	. 367	1,195	175	652	594	1,639
Exempt						
Government owned .	1,613	398	510	295	1,683	105
Other	. 162	166	99	131	90	142
Total	. 1,775	564	609	426	1,773	247
Goods						
Agricultural vans and		-				
lorries	. 68	47	89	61	124	48
Showmen's special ve-	1					
hicles Local authorities (water		-		-		
ing and cleansing) .		8	11	10	9	2
Other goods vehicles				10		-
Weight unladen		1				
Exc. Not exc.						
- 12 cwt.	*		1,055	491	1,126	524
12 cwt. 21 tons	. *		4,099	2,058	4,775	2,076
2½ tons 5 tons		*	307	261	423	285
5 tons —		*	43	34	81	55
Total of other goods	4000	2 270	E 504	2.044	4 40-	2010
vehicles Total	F 030	3,279 3,334	5,504 5,604	2,844	6,405	2,940
1000	-,-56		-,			-, - 12
	33,833	10,070	35,181	9,595	40,001	11,746

* Figures not available

earlier. The total for November, 1939, is 10,070, compared with 33,833 a year earlier; for December, 1939, it is 9,595, compared with 35,181; and for January, 1940, it is 11,746 compared with 40,001.

The Motor Industry and War Orders

Motor vehicles from the B.E.F. needing repair are now coming back to this country and are being sent for repair in civilian garages, under the scheme arranged by the Ministry of Supply in co-operation with motor trade organisations. So far most of these returned vehicles are those impressed, as a temporary measure, from civilian sources at the beginning of the war. They are being replaced in France by new specially-built Ministry of Supply vehicles which are better suited for military purposes. It is, however, the intention of the Ministry that not only impressed vehicles but all vehicles which can be repaired in this way shall be sent to trade garages in this country as the war proceeds. The Ministry of Supply has paid official tribute to the fact that the British motor industry has adapted itself well to the very heavy demands necessitated by mechanisation of the Army, and the rapid expansion of Army and Air Force requirements. In the war of 1914-19, although mechanisation was not developed to anything approaching the present degree, it was necessary to buy large numbers of motor vehicles abroad for use with the British forces. So well has the British motor industry responded to present heavy demands that it has not been necessary for the Ministry of Supply or the Air Ministry to purchase any vehicles abroad for use in France since the outbreak of war, and it is confidently expected that all future requirements will be provided from works in this country. One British works alone has delivered 10,000 motor vehicles under Ministry of Supply contracts since the beginning of the war.

Railway Horses in Wartime

The British railways are the largest users of horses in the country, employing over 11,000 animals. Most of these are used for collection-and-delivery work, but about 300 are employed in goods yards for shunting. Horses begin their railway careers when between 5 and 6 years of age, and normally retire at about 12 years. For much of the collection-and-delivery work performed by the railways horses are still invaluable, especially in wartime when the conservation of petrol supplies is of importance, and special provision has been made for their safety in the event of air raids. In many cases stables have been specially protected, and in others where stables are exposed the animals have been moved as far as possible to sheltered accommodation, or transferred to country districts. Hair cutting has been suspended, as long hair helps as a protection against gas. Blankets are also supplied to place over the stalls, and a special issue of knives has been made to the staff so that the horses may be freed as quickly as possible in the case of emergency. are kept ready to slip on to quieten the animals if explosions occur, and extra halters have been provided.

Emergency Road Bridge Construction

The Government's scheme for the high-speed construction of emergency bridges to take the place of existing road bridges which might be damaged or destroyed in air raids includes the adoption of a patent unit-construction bridge, known as the Callender-Hamilton, which has nine standardised parts and resembles on a large scale the parts of a model construction unit. Some brief details were included at page 518 of our October 20 issue, and we are now able to reproduce a photograph showing a typical heavy-duty highway bridge being assembled. The parts can be assembled with exceptional speed to replace bridges varying in span from 40 ft. to 200 ft. The one shown in our illustration is a single track road bridge of 140-ft. span with main girders 20 ft. deep. All the steel-work is galvanised and the joints are bolted. Assembly is facilitated by the overhead travelling gantry which can be seen in the illustration, and from which the steel members are lifted into position. As construction proceeds, the gantry travels forward on rollers running on the top chord. The bridge itself is supported on temporary rails by means of special shoes ready for launching across the gap to be spanned. Supplies of materials have been provided at convenient points



Callender-Hamilton patent unit-construction bridge of 140-ft. span being assembled from standard parts during a training course in Lancashire

in each of the Ministry of Transport's eight engineering divisions. Teams of contractors' men have undergone intensive training in both London and Lancashire, and the illustration was taken in the latter area. The adoption of this standard form of construction, together with the new methods of launching, will, it is believed, go a long way towards nullifying the effects of any air raids in which road bridges may be damaged. We are indebted to Callender's Cable & Construction Co. Ltd. for certain of these details.

Gas Fuels for Road Work

Town gas as a fuel for road transport vehicles originated in 1916 when Barton Bros. converted one of their buses running between Nottingham and Beeston. By 1918, about 5,000 vehicles had received Board of Trade permits to use low-pressure gas stored in bags above the vehicle, but little more was done in this direction between 1918 and the beginning of the present war. Many vehicles in this country and abroad are now running on low-pressure gas, among them some of the modern buses belonging to Barton Transport Limited, successor to Barton Bros. Two of the principal investigations into the use of town gas as a road transport fuel made during the past few years have been conducted at Birmingham and Newcastle-upon-Tyne, and in each case comprised experiments with high-pressure and low-pressure forms. Tyneside experiments were described in our issue of December 15. The data secured in the Birmingham investigations were presented in a paper entitled "The Use of Gas as a Fuel for Motor Vehicles" submitted by Dr. J. S. Clarke to the Institution of Automobile Engineers, and published at the end of last year. This paper deals mainly with the compression, treatment, and thermodynamics of gas as a fuel, rather than with its actual performance in service. Another paper, on the improvement of the calorific value of gas fuels for

vehicles, was presented before the Institute of Fuel on December 15 by Messrs. J. I. Graham and D. G. Skinner.

In the expectation that gas-bags on top of single-deck buses will come into extended use during the war, the Minister of Transport proposes to amend the regulations governing the height of such vehicles. Under existing rules the height of a single-decker must not exceed 10 ft. 6 in., but the proposed amendment will sanction a height of 15 ft. provided that the extra height is due solely to the adaptation of the vehicle for the carriage of flexible gas containers. Other conditions are that the containers must not exceed 150 lb. in weight in the aggregate, and that the gas pressure must not be greater than I lb. per sq. in. above atmospheric. It is proposed to embody these amendments in the Public Service Vehicles (Conditions of Fitness) (Amendment) Provisional Regulations, 1940. Low-pressure gas vehicles are running already in Newcastle, Nottingham, Bradford, Ipswich, and elsewhere, and London gas companies are understood to be ready to fill bags on commercial vehicles. An Ipswich firm is marketing lowpressure gas bags at £25 for the 300 cu. ft. size, and gas-mixing valves for attachment to the engine.

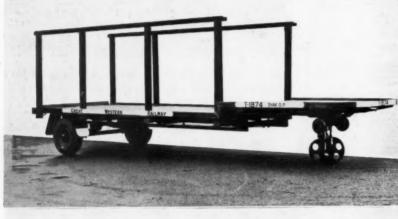
Town Transport in Europe

When war broke out in August, 1914, all the Paris buses were withdrawn, but by the beginning of March, 1915, some of the services had been resumed. At that time trams provided the principal street transport in Paris, but they have since been abandoned. In the present war the buses have

therefore continued to run, but the services have been drastically curtailed, and one report says that only one tenth of the normal fleet is at work. Buses cease running about 8.30 p.m. Fuel restrictions in France were decreed on February 29.

In Berlin it seems that both buses and trams are at work, but with the services reduced to 15-min. headways. Short-distance tram passengers are stated to have increased from 420,000 a day in 1933 to nearly 2,000,000 a day now. The Berlin municipal authorities are understood to have placed the tramway system at the disposal of the Ministry of Transport to be used for the delivery of coal and potatoes. Tram lines have been laid to railway sidings and to the canal. Drivers of buses and tramcars who work in the Berlin blackout are being given two weeks' holiday in places in the Baltic and Mecklenburg Forest areas, with all expenses paid. About 2,400 drivers come under the plan, and they take their holidays in rotation.

Warsaw is stated to have had its town buses removed by the German authorities. Some trams continue to run, but since January 16 special compartments have been reserved for Germans, both military and civilian, and Jews are stated to be banned from travelling in public vehicles, excepting by special permit. Owing to petrol shortage in German-occupied Poland, it seems unlikely that a bus service will be restored in the near future. The principal tram services at present working are understood to be those linking the centre of the city with the fine residential suburb of Zolibor.



Left: A 3-ton Tasker drop-frame trailer designed for the transport of portable

buildings

Special Type G.W.R. Road Transport Vehicles



Left: Another trailer with bodywork suited to a specific traffic. It is also based on the 3-ton Tasker drop-frame trailer, and has been designed to afford snug accommodation for the standard packages of prepared cereals forwarded by the Kellogg Co. of Great Britain Ltd. As with all types of articulated trailer, it has been subjected to very rigid stability tests

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Overseas Notes

Trolleybuses in North America

Reports collated by our American contemporary, the *Transit Journal*, for its annual statistical number show that there were 2,051 trolleybuses in operation on 1,503 miles of route in the U.S.A. and Canada at the beginning of 1939. At the end of the year there were 2,255 vehicles at work on 1,730 miles of route, an increase of 10 per cent. in the total of vehicles and of 15 per cent. in the route mileage. The

the department. Supplementary to the passenger business by road services is the conveyance of parcels, of which approximately 300 are conveyed daily by the Dunedin cars.

Tramways in Holland during the Bad Weather

The Rotterdam tramways management has issued a statement showing how successfully its services were maintained in spite of the bad weather conditions recently, when frost

Unusual ventilation for the driver's cab has been incorporated in the coachwork designed and built by the South African Railways for 117 new Leyland double-drive Hippos. The front of the cab is composed of two panels, one mounted about 4 in. behind the other. The front panel is cut away from around the radiator and, when the vehicle is in motion, air sweeps through this opening and into the cab via the 4 in. gap. This method of ventilation has been welcomed by drivers during the hot weather. The high-sided body is of all-steel construction, the body runners of box-sectioned pressed steel, and the tar sheet rails manufactured from old locomotive steam pipes



number of cities in which trolleybuses were in operation increased during the year from 63 to 66; the three new cities were Wilmington, Delaware; Wilkes-Barre, Pennsylvania; and Edmonton, Canada.

Argentine Road Construction

The Argentine National Highways Board is going ahead with its extension programme of road construction, says the South American Journal. The board has recently called for tenders for the construction of roads amounting to an approximate value of 5,000,000 pesos. One of the new roads will be an extension to Lobos of the paved road between Buenos Aires and Cañuelas. The extension will be 36 km. (22½ m.) long. Another tender relates to the improvement of an 81 km. (50 m.) section of National Route No. 7, which forms part of the road to Mendoza, and is, in addition, part of the Pan-American roadway system.

Railway Road Service Routes from Dunedin, New Zealand

The new Dunedin bus station, for railway road services, recently opened at Dunedin (South Island) [and described and illustrated in our issue of February 9—ED., R.G.] serves a wide area of beautiful country. It has the advantage of being situated close to the railway passenger station, and is the depot from which the following daily road passenger services leave: For Christchurch via Palmerston, Oamaru, and Timaru; for Karitane and Palmerston; for Roxburgh and Pembroke; and for Balclutha, Clinton, and Tahakopa; it also serves the Dunedin—Port Chalmers suburban services.

These far-reaching passenger road connections call for a large fleet of vehicles to operate them, and the new building garages approximately 26 passenger vehicles. Twenty-three of these are running on the regular services which leave Dunedin daily, and others are needed for special work, such as the four-day excursions of parlour buses to the scenic Eglinton and Hollyford valleys in the summer months, and for the conveyance of parties who charter service cars from

and ice brought many bus services to a complete standstill and threw a heavy additional traffic on the trams in and around the city, some one million more passengers being carried than in the previous January. This was accomplished in the face of other difficulties, such as shortage of staff resulting from widespread illness. The undertaking invites those who have been agitating for the abolition of the trams to remember that for many days they were almost entirely dependent on the trams for local transport and received good service from the "out of date" rail system.

Road Development in Turkey

Land transport development in modern Turkey has been confined almost entirely to railway construction until now, but a 10-year plan for building about 10,000 miles of main road has just been formulated. This scheme, which is estimated to cost some £20,000,000, is intended to be the first part of a larger plan envisaging 20,000 miles of road. In European Turkey, the so-called London—Istanbul road has been finished almost to the frontier. Asiatic Turkey, however, is virtually without modern roads, and Ankara—the capital—can be reached by car only at favourable seasons of the year. The absence of roads severely hampered the evacuation of the wounded and the dispatch of relief after the recent earthquake, and this experience emphasised the urgent need of embarking on a large-scale programme of road construction, planned to meet both administrative and strategic requirements.

Chungking-Kunming Highway Opened

On February 1 another important artery in the system of highways in Western (or Chinese) China was opened for traffic. This road provides direct communication between Chungking, the present capital, and Kunming (Yunnan-fu), the capital of Yunnan, the westernmost province of China, bordering upon Burma, and connected with Lashio on the Burma Railways by the now-famous Yunnan—Burma highway. Formerly Kunming could only be reached from

Chungking via Kweiyang, capital of Kweichow Province, a journey of six days' duration by car, whereas by the new road the time taken is only four days. It will be remembered that railways are also being built more or less parallel to these two roads: Sui-fu—Kunming, and Kunming to the Burma frontier about 100 miles east of Lashio.

Producer Gas in Africa

Lorries equipped with producer-gas propulsion are reported to be giving good results in the French African colonies, particularly over the long desert road from Dakar, in Senegal, to the port of Casablanca in Morocco. Recent trials with lorries carrying two to three tons showed that an end-to-end speed of 28 m.p.h. could be maintained. The fuel was charcoal, obtained from different woods found along the route.

Danish Road-Rail Improvements

Plans have been approved for the replacement by an underbridge of a dangerous level crossing in the middle of Kolding. Local conditions are difficult; the double railway line is on a sharp curve with very limited views of the line in both directions, and the road, which is a busy one, is on a hill at this point. The line carries the Fredericia-Esbjerg and the Fredericia-Padborg-Germany traffic, and although speed is limited to 50 m.p.h. on the curve, the crossing is dangerous and has been the site of several accidents.

The small Lyngby-Nærum private line, which connects with the electrified Copenhagen-Holte suburban line at Jægersborg and carries a fairly considerable passenger traffic, is to be realigned and have a new terminus at Nærum. The reason for this is that a new arterial main road, now being constructed, crosses the present line; a level crossing is inadmissible on this road, and the expense of constructing an under- or overbridge would be out of proportion to the importance of the line.

Mozambique Government Road Services

The annual report of the Administração dos Serviços dos Portos, Caminhos de Ferro e Transportes, of the Portuguese Colony of Mozambique gives particulars of the road motor services operated by the colonial government in conjunction with, and as feeders to, the State railway system. In the year 1938, covered by the report, 28 permanent and 7 seasonal services were operated by the Department, over 3,225 km. and 425 km. respectively, an increase of 1,423 km. over the length worked in the previous year. The total of 218,064 passengers carried was an increase of 28 9 per cent., accounted for largely by the movement of native labour to and from the Rand mines. Goods tonnage increased to 37,310 tons, a

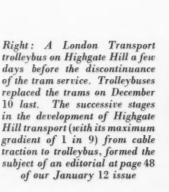
20 per cent. improvement. According to the report, most of this traffic originated or continued on one or other of the railways, and in this way the two services are complementary and not competitive.

Spanish Road Reconstruction

The reconstruction of the 1,400 bridges destroyed by the republican forces, in their retreat during the civil war, is proceeding rapidly. On February 3 the Minister of Public Works inaugurated the new road bridge over the River Noya at Martorell, on the main highway between Madrid and the French frontier via Junquera. On February 4, a similar ceremony took place at Sarriá del Ter, where the new bridge over the Ter was opened to road traffic. Both the new bridges are of armoured concrete. The Martorell bridge consists of six 20 m. (65½ ft.) spans with a width of 12 m. (39½ ft.). The bridge at Sarriá del Ter is 160 m. in length (525 ft.) and 9 m. (29 ft. 6 in.) in width, with a roadway of 6.55 m. (21 ft. 6 in.). In this bridge there are six spans of 12 m. (39½ ft.) and two spans of 28 m. (102 ft.). Both bridges have been constructed by the military corps of engineers.

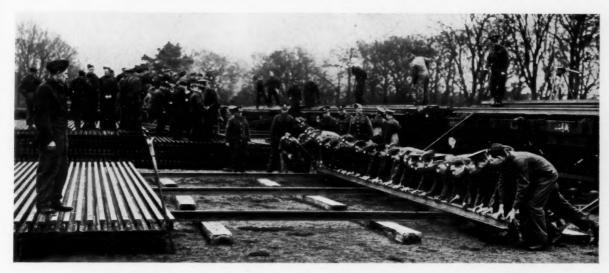
Gas Producers.—The continuous development which has taken place in the Koela type of gas producer for road transport vehicles has attained another stage with the production of the Brush-Koela duo-draught equipment, which it is claimed incorporates the best features of up-draught and cross-draught producers. The size suitable for 3-ton to 6-ton lorries is marketed at £95 ex-works, and is illustrated and described in brochure No. K99 issued by the Brush Electrical Engineering Co. Ltd.

LEYLAND VEHICLE IMPROVEMENTS.—During the past 12 to 18 months various advances in detail design have been made in Leyland passenger and goods vehicles. The company has been concentrating on the 8.6-litre oil engine as far as power units are concerned, and this model is now built with tin-plated aluminium-alloy pistons. Main and big-end bearings have aluminium-alloy thrust halves, nitrided crankshafts, new three-point mounting made up of rubber and helical steel springs, improved idling characteristics, and automatic lubrication of the engine-driven exhauster end plates. Vehicle springing has been improved to give good riding under both light and laden conditions, braking on the vacuum triple-servo system has been adopted, and special automatic brake adjusting mechanism is fitted in conjunction with greater clearance between brake drum and road wheels, giving better cooling





British Railways and the War-10



Sappers in the Royal Engineers who are undergoing training in Hampshire, stacking flat-bottom rails





Above: Tank locomotive " Selborne"

Left: A lesson in steam locomotive overhaul at an R.E. Railway Training Centre

The annual peacetime training of the Supplementary Reserve Transportation Units has been described and illustrated in "The Railway Gazette" from time to time; the most recent article appeared in our issue of January 6, 1939

Wartime News and Censorship



Annotated photo by courtesy of]

[" Illustrated" (Odhams Press Limited) The press room established by the Ministry of Information at the Senate House, University of London, on the outbreak of war. On October 9 last, the news and censorship functions were separated from the Ministry of Information and constituted as the Press & Censorship Bureau, ultimately responsible to the Home Secretary. It will be noticed that "The Railway Gazette" is the only technical journal represented in the press room (see editorial article on page 327)

RAILWAY NEWS SECTION

PERSONAL

Mr. George Ellson, Chief Engineer, Southern Railway, has been elected President of the Engineering Society of the City & Guilds College. He will deliver his presidential address at the College on March 14 at 4.45 p.m. The subject is to be "Railway Engineer-

Mr. A. Howie, Joint Accountant, Southern Railway, is to retire on March 31. The other Joint Accountant, Mr. R. G. Davidson, is to become Chief Accountant from the same date.

The Southern Railway Company announces the following appointments, to date from February 26:

L. Mr. J. L. Harrington, Divisional Marine Manager, Dover, to be transferred to the General Manager's Department, Headquarters, for Special Duties.

Mr. H. C. Wood, Assistant Divisional Marine Manager, Dover, to be Divisional Marine Manager (Acting) during Mr. Harrington's absence.

Mr. T. W. D. Abell, to be Acting Assistant to Divisional Marine Manager, Dover.

L.M.S.R. APPOINTMENTS

The following appointments are announced by the company :-

Mr. W. Paterson, District Engineer, Inverness, to be District Engineer, Glasgow (Central).

Mr. I. Frazer, Assistant to District Engineer, Derby (South) to be District Engineer, Inverness.

Mr. William Ferguson Connal, Mechanical Engineer, Canadian National Railways, Montreal, has been appointed Chief Mechanical Engineer, with jurisdiction over the whole system.

Mr. G. H. Lash, Assistant to the Director of Publicity, Canadian National Railways, is acting as Director of the Dominion Government Information Bureau in place of Mr. Walter S. Thompson who, as announced in our issue of January 26, has retired.

THE INSTITUTION OF CIVIL ENGINEERS Transferred to full member:

Edward Septimus George de la Motte, Way & Works Department, Anto-fagasta (Chili) & Bolivia Railway (Bolivian Section), La Paz, Bolivia.

Mr. Christopher Horsley Whitelegge, who, as announced in our issue of February 2, has been appointed Deputy Solicitor & Parliamentary Agent, Great Western Railway, is a grand-nephew of Isambard Kingdom Brunel. He was educated at Charterhouse and on the Continent, and after some legal experience in the City of London, joined the Great Western Railway service in July,



Mr. C. H. Whitelegge Appointed Deputy Solicitor & Parliamentary Agent, Great Western Railway

1913 He is an LL.B. of London University with first class honours, and obtained second class honours in the Law Society's examinations. During the last war Mr. Whitelegge served in France from June, 1915, to February, 1918, mainly with the 18th Division. He rejoined the G.W.R. Solicitor's Office in 1919, was appointed Parliamentary & General Assistant in 1931, and Parliamentary Agent in 1935. In September, 1937, he became Assistant Solicitor & Parliamentary Agent, and has continued to hold that office until his present appointment.

Mr. Frederick Mills has been ap-pointed Chief Mechanical Engineer, Western Australian Government Railways, to date from June 1, 1940, in succession to Mr. J. W. R. Broadfoot who has retired.

Mr. P. W. S. Bygate, Acting Goods Manager, London & North Eastern Railway, Middlesbrough, retired on March 2.

Mr. K. P. Walker, District Docks & Goods Manager, West Hartle-pool, London & North Eastern Railway, has been appointed to a similar position at Middlesbrough.

> Mr. W. P. Allen, Dock Superintendent, Middlesbrough, London & North Eastern Railway, is to be District Goods & Docks Manager, West Hartlepool.

We regret to record the death on March 4 of Mr. J. R. Morris, formerly Divisional Superintendent, Chester, Great Western Railway, at the age of 67. Mr. Morris was born in Chester in 1872, and also educated in that city. He began his career in the Superintendent's office, Chester, in July, 1888, and in 1892 was transferred first to the Private Sidings Section of the General Manager's office, Paddington, and later to the Com-mercial & Publicity Department. In the latter position he was largely responsible for the publication of the first editions of "Holiday Haunts" and other G.W.R. travel books. In 1901 he received the thanks of the directors and a medal "for the direct and personal responsi-bility" he took in connection with Queen Victoria's funeral. In that year also he was deputed by the General Manager to revise the staff uniforms, with the result that for some grades serge was substituted for cordu-

roy, to the great satisfaction of the men. Mr. Morris travelled extensively in connection with his duties, visiting Ireland, France, and America, returning thence in 1909 in the R.M.S. Mauretania, when the Cunard Line inaugurated its call at Fishguard. In 1910 he went back to Chester as Assistant Divisional Superintendent, and in 1922 took control of the division. His foresight enabled him to visualise the effect the internal-combustion engine would have on railways, and his knowledge of the subject was the reason why he was selected to assist temporarily at headquarters in connection with the railway companies' Road Traffic Acts, of 1928. He was keenly interested in staff welfare, athletic affairs, and the St.



The late Mr. J. R. Morris
Divisional Superintendent, Chester, Great Western
Railway, 1922-1938



Mr. W. Wells-Hood, D.S.O.
Works Manager, Shildon & Faverdale Wagon Works,
L.N.E.R., 1934-1940



Mr. J. W. J. Webb Appointed Assistant to the Chief Accountant, Great Western Railway



Monsieur V. E. M. Teugels

Chief of the Secretariat, International Railway,
Congress Association, 1928-1940



The late Mr. S. M. Vauclain
Chairman, the Baldwin Locomotive Works,
1929-40



The late Mr. Harry Wauchope
Electrical Engineer, Docks & Marine Department,
Southern Railway



Annual dinner of the Institution of Locomotive Engineers at the Savoy Hotel, on February 28 (see report on page 359)
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John Ambulance movement, of which was created a Serving Brother in 1937. Mr. Morris retired from the railway in July, 1938, and it is an interesting fact that, at the time of his retirement, Mr. Morris's family had 650 years of service with the Great Western Railway to its credit. For example, his father, Mr. J. Morris, was Superintendent of the Line from 1904 to 1911. An uncle, Mr. S. Morris, was for many years Divisional Superintendent at Exeter. A brother, Mr. S. F. A. Morris, retired from the position of Divisional Superintendent, Gloucester, three years before Mr. J. Morris retired. Another brother, W. R. S. Morris, occupies a responsible position on the staff of the Chief

Mr. W. Wells-Hood, Works Manager, Shildon and Faverdale wagon works, L.N.E.R., retired on February 8, as announced in our issue of December 8. He entered the service of the North Eastern Railway in February, 1896, as an apprentice at the Queen Street locomotive works, York. In 1900 he saw service in the South African War, and on his return became a draughtsman to Mr. A. C. Stamer. In 1904 Mr. Wells-Hood was transferred to Gateshead as East Coast Locomotive Inspector, and in the following year became Statistician to the Divisional Locomotive Super-intendent at York. In 1906 he was made General Inspector, and from 1907 to 1910 was Motor Superintendent. He was appointed Assistant Passenger Manager in 1911, and Assistant District Passenger Agent in 1913. Mr. Wells-Hood's war record from 1914 to 1919 included service on ten different fronts. He holds ten medals and decorations including the D.S.O. and four Russian Orders. In 1920 he returned to the Chief Mechanical Engineer's Department and subsequently became first Works Manager at Faverdale wagon works, later, lune, 1934, adding Shildon works to his On January 15 last, responsibilities. Mr. C. M. Jenkin Jones, Divisional General Manager, North-Eastern Area, Sir Nigel Gresley, Chief Mechanical Engineer, and other officers, both past and present, assembled at the Royal Station Hotel, York, to pay tribute to Mr. Wells-Hood on his retirement. Mr. Jenkin Jones made a presentation of a radio receiver on behalf of the company's officers, and wished Mr. Wells-Hood happiness in his retirement.

Mr. J. W. J. Webb, whose appointment as Assistant to the Chief Accountant, Great Western Railway, we announced in our issue of February 23, began his career with the company in the Traffic Department at Kings Sutton in December, 1919. A few months later he was transferred to the Chief Accountant's Office (Departmental Accounts Section). In March, 1925, he was selected for the Special Training Scheme and during the next four and a half vears gained wide experience in the Traffic, Goods, and Docks Departments. From his return to the Chief Accountant's Office in November, 1929, he was engaged in duties connected with Joint Line and Station Accounts and financial matters arising out of L.M.S.R./G.W.R. and L.M.S.R./L.N.E.R./G.W.R. Pooling and Co-ordination Schemes. From August, 1933, until March, 1936, he was also Secretary to the Committee of Accountants of the four main-line companies and the London Passenger Transport Board, appointed to augurate the London Passenger Pooling Scheme. During the last few years he has been employed on matters of a special nature, and in February, 1938. was appointed an Assistant in the Chief Accountant's Office. Mr. Webb is a graduate (B. Com.) of London University and also holds "merit" certificates in station accountancy and signalling. He takes an active interest in the Hockey Section of the G.W.R. (London) Athletic Association, of which he was a playing member until two years ago.

Monsieur V. E. M. Teugels, Chief of the Secretariat, International Railway Congress Association, retired on March 1. He began his railway career in May, 1893, with the Belgian State Railways and in 1895 was appointed to the London office where he remained until 1922. He then joined the Advertising Department of the State Railways in Brussels, and was associated with the inauguration of the first international Pullman car trains. His close know-ledge of England was of great service during the London Congress of 1925, and in 1928 he was appointed Chief of the Secretariat of the International Railway Congress Association. M. Teugels was awarded the Croix de Chevalier de l'Ordre de Léopold and the Médaille du Roi Albert for his services during the war of 1914-1919.

We regret to record the death on February 4 of Mr. Samuel Matthews Vauclain, one of the most outstanding figures in the locomotive industry. For some 57 years he has played an important part in the destinies of the well-known firm of locomotive engineers, the Baldwin Locomotive Works, of Philadelphia, U.S.A. Mr. Vauclain was born on May 18, 1856, and began his working life at the age of 16 years when he entered the shops of the Pennsylvania Railroad at Altoona, Pa. On completing his apprenticeship, he was made a foreman in the Baldwin works and given charge of the frame shop, and later, in 1882, was entrusted with the inspection of some locomotives then being built for the Pennsylvania Railroad. He was appointed a shops superintendent in 1883, and in 1886, at the age of 30, was made General Superintendent of the entire Baldwin plant. In 1896 he became a member of Burnham Williams & Co., proprietors of the works. Later Mr. Vauclain was successively Vice-President of the Baldwin Locomotive Works, as became after incorporation in 1909. senior Vice-President in 1917, and then President in 1919. The last-named

position he occupied for 10 years, when he relinquished these arduous duties for those of a less onerous nature and became Chairman of the board, a position he held at the time of his death. During his association with the Baldwin works, he was directly connected with the construction of more than 60,000 locomotives. He nevertheless had other interests, such as directorships of banks and industrial concerns, notably the Standard Steel Works and latterly other Baldwin subsidiaries, but it will always be as a locomotive man that he will be remembered.

We regret to record the death on February 14, of Mr. Harry Wauchope, Electrical Engineer, Docks & Marine Department, Southern Railway. Wauchope, who was 63 years old, was a native of Glasgow, and was educated at Kelvinside. He served an apprenticeship with the North British Railway, and gained his technical education at Glasgow Technical College. After some years of experience in a civil engineer's office, he sailed with the P. & O. Line as one of the first seagoing electricians. Mr. Wauchope later joined the British Aluminium Co. Ltd., at Birmingham, and afterwards began a railway career with the London & South Western Railway as an electrical engineer on the Waterloo & City Railway. On November 1, 1910, he was appointed to the newly-created post of Docks Electrical Engineer at Southampton. He retained this position under the Southern Railway on grouping, and latterly his title has been Electrical Engineer to the Docks & Marine Department.

According to an Associated Press message, Mr. B. Lawrence, Secretary of the Indian Railway Congress Association, is retiring at the end of March and will be succeeded by Mr. V. L. Dean, formerly of the North Western Railway and recently in charge of the Government of India Railway Publicity in New York.

Forthcoming Events

Mar. 11 (Mon.).—Institute of Transport (London), at Charing Cross Hotel, 1 for 1.15 p.m. Luncheon. Address by Mr. Robertson F. Gibb.

Institution of Electrical Engineers (London). titution of Electrical Engineers (London), Savoy Place, W.C.2, 6 p.m. Joint meeting with Inst. of Civil Engineers and Inst. of Mechanical Engineers. "Emergency repairs, with special reference to welding."

12 (Tues.).—Institute of Transport (Birmingham), at Queen's Hotel, 6 p.m. Address by Mr. O. Cecil Power. Annual general meeting.

general meeting.
Institution of Automobile Engineers (Coventry), at King's Head Hotel, 7 p.m. "Modern applications of cast iron in automobile construction," by Messrs. E. Toghill and

R. Dowle.

13 (Wed.).—Institution of Automobile Engineers (Manchester), at Engineers' Club, Albert Square, 7.15 p.m. "Alternative fuels for c.i. engines," by Mr. W.

Allen. Allen. Allen. Mar. 14 (Thurs.).—City and Guilds College Engineering Society, Exhibition Road, London, S.W.7, 4.45 p.m. Presidential address by Mr. George Ellson.

TRANSPORT SERVICES AND THE WAR-28

Lord Stamp on railways in the first six months of war—London to Scotland sleeping car accommodation—North of Scotland a restricted area—Heavy movements of coal southwards—Germany and its Protectorate

Reviewing in the L.M.S.R. staff journal, Carry On, the first six months of war, Lord Stamp, the Chairman of the company, states that 336 L.M.S.R. coaching vehicles have already been converted or allocated for use in ambulance trains. Fifty L.M.S.R. locomotives have been seconded for war service other than on the company's system. In a single month, the L.M.S.R. ran no fewer than 559 special trains for the fighting Services; the total personnel conveyed by those trains exceeded 143,000 officers and men, apart from the many who travelled by ordinary services. The largest number of special trains run for troops on any one day was 73; in one case the L.M.S.R. moved a large part of an Army Division, in 13 special trains, in a two-days period. The arrival in this country of two of the Canadian contingents, involved running nearly 50 special trains on the L.M.S.R.

About 10,000 L.M.S.R. employees are now serving with the Colours; they have had to be replaced in full, and there is also a large additional staff. At various places on its system the company is carrying out, to Government requirements, schemes for the improvement of operating facilities in order to cope with increased traffic brought about by the war; these improvements include additional running loops, sidings, signalling equipment, and so on. In order to afford alternative communication in the event of damage by enemy action, and to facilitate the movement of certain wartime traffics, new junction lines are being laid in at various points.

Railways and the War Effort Filmed

A film, called "Carrying On," which was shown privately in London on February 29, deals with the part which the British railways have played since the outbreak of war and how the needs of the nation are being served. The film was made at numerous locations in different parts of the country, although for obvious reasons no identification is given. The evacuation of the children; the movement of troops and munitions; work at control offices; foodstuffs and freighters at the docks; and the preparations against aerial attacks are shown in this production and give some indication of the vastness of Britain's war effort. The

CENSORED!

In peace-time railways could explain When fog or ice held up your train But now the country's waging war To tell you why's against the law.

The censor says you must not know When there's been a fall of snow

That's because it would be news
The Germans could not fall to use—
So think of this, if it's your fate
To have to meet a train that's late,
Railways aren't allowed to say
What delayed the trains to-day.

BRITISH RAILWAYS

The British railways have not been ineffective in their wartime propaganda, yet this poster shows that Censorship may sometimes prevent them playing a trump card film is interesting and should appeal to all sections of the community. In our opinion, one defect is that no appropriate sounds are heard, the accompaniment being entirely one of light music. In these days of talkies, it seems strange to see a locomotive being stoked and cleaned to no other sound than that of so-and-so's overture to such-and-such an opera. The process of loading and unloading ships on quavides, too, is strangely silent. Is this also part of our exhaution from the powers that be "Not to help the enemy"?

Reading Lights in Trains

A further 11,287 railway carriages were equipped with improved lighting in the seven days ended Friday, March 1. The total number of compartments equipped to date is 125,855, leaving 88,772 yet to be dealt with.

Sleeping Berths Between London and Scotland

joint announcement issued on March 1 by the L.M.S.R. and the L.N.E.R. stated that coal traffic requirements have compelled the latter company to reduce drastically the number of sleeping cars on the night trains between King's Cross, Newcastle, Edinburgh, and Aberdeen on and from Monday last, March 4. To minimise inconvenience, the two companies have arranged that while these restrictions continue a limited number of first and third class sleeping cars will be run by the L.M.S.R. between Euston and Edinburgh (Princes Street) daily except on Saturdays. The booking arrangements for the whole of the sleeping berths available in each direction between London and Edinburgh by each route have been co-ordinated, and L.N.E.R. single tickets and outward halves of return tickets between these points will be available by the L.M.S.R. route when held in conjunction with sleeping berth tickets. Passengers are able to reserve whatever sleeping berths are available between London and Edinburgh by applying in London either to King's Cross or to Euston, and in Edinburgh either to Waverley or Princes Street stations. The railway companies announce with regret that it has not been found practicable to make similar arrangements between London and Aberdeen. The interavailability of tickets is temporary and applies only to passengers having obtained sleeping berth reservations. Return halves continue to be interavailable as heretofore.

North of Scotland Protected Area

The War Office announces that an Order under the Defence Regulations, declaring a large area in the North of Scotland to be a protected area, has been signed by the Secretary of State for War and will come into force on March 11. The area affected consists of the Counties of Caithness, Sutherland, and Ross & Cromarty, and those parts of the Counties of Inverness (exclusive of the Burgh of Inverness) and Argyll, which lie to the north and west of the line of the River Ness, Loch Ness, the River Oich, Loch Oich, Loch Lochy, the Caledonian Canal, Loch Linnhe, and the Firth of Lorne. It includes all the Islands of the Inner and Outer Hebrides lying north and west of that line. The effect of the Order will be that on and after March 11 no one will be allowed to remain in or enter the area without a permit, except those (not being enemy aliens) whose homes are in the area on the date in question.

Those exempted from the provisions of the Order include members of His Majesty's Forces and Police Forces; those who hold official passes, Foreign officers or officials who hold foreign official passes whose official duties require them to enter the area; persons under the age of 16 years; persons certified to be employed by the Admiralty, Army Council, or Air Ministry within the area, and holders of certificates of employment in essential war services whose duties in such employment require them to enter or be within the area. Persons (other than enemy aliens) who are on March 11

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reciding within the Burgh of Inverness, or in that part of Inverness-shire which lies outside the area, and in the Burgh of Oban will not be required to obtain written permits to enter the area. They will, however, be required to prove their identity. Any one wishing to enter the area by sea or be air will be allowed to do so only by way of prescribed sea and air ports. The seaports are Glasgow and Oban, and the airports are Renfrew, Inverness, and Aberdeen.

The Lostwithiel-Fowey Line of the G.W.R.

The passenger train service between Lostwithiel and Fowey, G.W.R., was discontinued with the introduction of the new G.W.R. timetable on February 5 and a bus service on weekdays only is maintained ten times a day each way by the Western National Omnibus Co. Ltd.; rail tickets are available on this, but heavy luggage is not conveyed.

1,000,000 Coal Wagons Moved

During Question time in the House of Commons the matter of coal transport has been raised more than once recently. The replies given by the Minister of Transport and his Parliamentary Secretary are set out on page 360. Since the date of the statements in Parliament it has been reported that the railways have moved more than 1,000,000 loaded wagons from the collieries since the resumption of coal transport after the severe weather in January. On the basis that the average load is about 10 tons, this would mean that approximately 10,000,000 tons of coal have been moved. During the two weeks ended February 15, 455,000 loaded wagons were moved, and in the next fortnight the number was 520,500. During Friday, Saturday, and Sunday last the corresponding number was about 100,000. The movement of this coal to consuming areas has gone far to relieve the shortage of supplies, but there are still areas where only restricted supplies are available.

British Columbian Timber Rail Agreement

In these columns on page 233 of our issue of February 16, we referred to the imminence of an agreement between the British Timber Control Board and the Canadian railways with regard to the trans-Canadian transport of timber to save tonnage via Panama. Our correspondent in the Dominion now states that this agreement has been announced and ratified, and that about half of the 100,000,000 ft. of timber which the British Government is prepared to take monthly from British Columbia will probably go by rail to the Atlantic or St. Lawrence ports. The agreed rates are not stated, but it is understood that reduced rates will apply to timber consigned to St. Lawrence ports, and the old rates to St. John and Halifax. Shipments will begin as soon as tonnage is available to carry the timber to the United Kingdom.

The Railways of Germany

A copy has reached us of the Reichsbahn-Kalender for 1940, which has been produced in a modified form owing to war conditions; each page now covers seven days, whereas, in previous issues, the practice has been to allot three pages to a week, two of them covering three weekdays each, and the remaining one applying to Sunday only. The pictures are of the usual high quality, and the theme of the text is the maintenance of traffic to and from foreign countries in spite of the The first picture is of the main station at Danzig, where there is again a Divisional Management. Posen is depicted later, with sign writers re-lettering the station name boards with the German name of the town; here too a Divisional Management has been re-established by the Germans. All the divisions have one page allotted to them, with text explaining the position of the lines under their control in the international traffic routes. The Saarbrücken management is temporarily stationed at Koblenz. (During the League of Nations regime in the Saar territory it was transferred to Trier.)

On the page devoted to the lines in Bohemia and Moravia appears a fine picture of one of the latest locomotives built at the Skoda works, and the organisation of those lines, which naturally form an important link in the routes to other countries, is stated to be approaching a satisfactory condition. The damage in the corridor territory is depicted by a view of the inspection by Dr. Dorpmüller of the temporary Dirschau bridge, which has enabled through running to be resumed

between Berlin and Königsberg. The lines in the parts of Poland not re-incorporated in Germany, but subject to a provisional government at Krakow, and which include the important lines in and round Warsaw, are being worked under the name of the Ostbahn; on these lines an enormous amount of work has been carried out in establishing temporary bridges. Among the few pages in the Reichsbahn-Kalender devoted this year to railway occupations, is one showing a woman ticket collector. Large numbers of male staff are stated to have been transferred to the lines in the newly-occupied districts, thus depleting the experienced staff in Germany proper, apart altogether from army requirements. It is to be observed that, contrary to many statements recently published, the calendar gives the principal Christian festivals as usual; of course the references to certain party days, such as Hitler's birthday, are to be found, as in the past few

German and Bohemian Traffic Regulations

The Munich settlement of September, 1938, fixed new frontiers between Germany and Czecho-Slovakia, of which full details (accompanied by a map) appeared at page 903 of our November 25, 1938, issue. As a result of this settlement special railway agreements were made between the two countries regarding railway services affected by the shifting of the frontier, which led to lines crossing and re-crossing pieces of Czech and German territory. The proclamation of its independence by Slovakia in March, 1939, and the subsequent establishment of the German protectorate over Bohemia and Moravia rendered further changes inevitable in this matter and towards the end of 1939 the German Government issued Decrees coming into force on January 1, 1940. These are, however, largely based on the agreements drawn up after the Munich meeting.

The Decrees cover three principal circumstances. first deals with traffic between Germany proper and the Protectorate and stipulates which places or stations, 75 in all, are to serve as frontier limit points. The large number shows how numerous are the railway connections and how closely the two territories are associated for trade and trans-The Bohemian and Moravian lines are being worked by a separate railway management, over which the German Minister of Transport exercises a certain measure of control. The old German-Czech charges and rates continue in force, but new arrangements are being worked out. The respective parts of the two managements, namely, the Reichsbahn and the Protectorate railways, including working at and main-tenance of joint stations, and similar details are covered by this Decree.

The second Decree deals with the privileged through trains, free of all customs, monetary, and other formalities, run by both managements across portions of "foreign" territory. The German services run on the following routes :-

Lundenburg—Pohl—Schönbrunn—Ruderswald ; Lundenburg—Brüsau—Abtsdorf—Lichtenau ; Lundenburg—Brüsau Lichtenau—Triebitz.

The Protectorate services run on the following routes:-

Böhmisch—Trübau—Brünn—Landshut ; Böhmisch—Trübau—Olmütz ;

Hruschau-Mährisch-Ostrau-Prerau-Lundenburg—Landshut.

The rates and charges of the operating management which runs its own train through with its own staff and rolling stock, apply in each case. An agreed scale of compensation charges regulates the sums paid in respect of these privileged trains, but the mutual liabilities balance each other for the most part, and the charges are stated to be kept very low. It was

intended to issue regulations covered non-privileged services on lines that pass partly over "foreign" territory or (being branches) end therein, but the difficulties have proved greater than was expected and no Decree has yet been issued covering

Traffic between Germany proper and Bohemia and Moravia as now become of the "inland" type instead of coming has now become of the under international regulations, and the standard German railway rules are now in force, although some modification is allowable if the German Minister of Transport agrees. German type of consignment note is now used for loads from the Reich, and a special one in the reverse direction.

GREAT SOUTHERN RAILWAYS COMPANY

Shortage of capital—Rateable valuation decision—Increased labour costs—Permanent way improvements—Road passenger traffic charges

The annual general meeting of the Great Southern Railways Company was held in the Gresham Hotel, Dublin, on March 1, Sir Walter Nugent, Chairman of the company, presiding

The Chairman said: Ladies and Gentlemen, the year 1939 has been an eventful one, and every business concern—whether situated in the war zones or in neutral countries—has been vitally affected by the outbreak of war in Europe. The effect on the receipts from the workings of the Irish railways has been, up to date, favourable rather than the reverse, in comparison with previous years.

The gross receipts from the operation of all railway and road services and other business of your company were £4,475,664—an increase of £195,876 compared with 1938. The expenditure under the same headings was £4,085,163, an increase of £120,521 over 1938. The net receipts from these services were, therefore, £390,501—or £75,355 more than in 1938. The net income for the year—after including miscellaneous receipts from rents, interest, etc., was £427,688, or £76,575 more than 1938.

Last year, notwithstanding £36,910 brought forward from the 1937 account, it was necessary to transfer over £6,000 from the compensation under the Irish Railways (Settlement of Claims) Act, 1921, to enable the debenture interest and fixed charges to be paid, but this year these commitments have been met out of current revenue, and there is a balance of £37,060 carried forward to 1940.

Undoubtedly the increased business in the latter half of the year—which was mainly in merchandise—must be attributed to war conditions. This is not a matter we can look upon with much gratification for, although this country is outside the war zone, it is bound eventually to be affected by the inevitable consequences, of disturbance of business money markets, etc.—which will ultimately be world wide.

Shortage of Capital

What has hampered us most of all—and prevents us making the progress which we feel we should and would like to make—is the shortage of working capital. The weak cash position of your company since 1938 made it necessary rigidly to harbour our resources, during the first seven or eight months of 1939—the most stringent economies had to be imposed and all expenditure practicable postponed—until increased receipts from summer and autumn traffics could be realised. We very much regret, therefore, to have to say that, notwithstanding the substantial increase in receipts of £195,876, there are again no dividends available for guaranteed preference, preference, and ordinary shareholders. All our available cash resources had to be applied to unavoidable additional expenditure as well as to replacements and arrears of work, which it was not possible to undertake in

I must here refer to what I said at our last meeting, namely, that should the appeal for a reduction of the rate-able valuation, placed by the Commissioner of Valuation on the company's property succeed, and the financial position of the company otherwise justify it, money would become available for the payment of the dividend on the 4 per cent. guaranteed preference stock for the year 1938.

It was hoped that the decision on the appeal would have been reached early in 1939—but the judgment was delivered only a few weeks ago after certain references to the Supreme Court had been made, and I am glad to say that it was altogether in your company's favour. Some time, however, must elapse before the precise cash value can be realised. When and how the money recoverable by the company—as a result of the judgment—will become available, and what the financial position of the company will be at that time, carnot be foretold at this stage.

The salaries and wages bill of the company for the year 1939 amounted to £2,495,916 compared with £2,446,023 for 1938—an increase of £49,893. While the company has never been opposed to the legitimate claims of their employees. must be admitted that wages costs continue to absorb too high a percentage of the gross revenue. Apart from the temporary increase of staff, which it was occasionally found necessary to make to deal with an increased volume of traffic during the year-the company was forced by circumstances to yield wage increases, amounting to £26,000 in 1939. Tl. full impact of these concessions, which were operative only for a portion of the year 1939, will have to be borne in the current year. Still more alarming, however, is the action of the trade unions, in confronting the company with fresh salaries and wages demands, which, if granted in full, would cost the company upwards of £350,000 in a normal yearwholly impossible burden and entirely beyond the company's resources

Your directors admit that the cost of many of the necessaries of life have increased—but they would ask the salaried and wages staff to appreciate that rising domestic costs must be borne by all sections of the community, including the shareholders of the company and themselves. No company can be expected to guarantee its employees immunity from their share of the burden. These rising expenses press heavily on the many small holders of guaranteed preference, preference, and ordinary stocks, who have received no dividends for some years. The concession of even a small proportion of the latest demands would place the company—already in a precarious position financially—in a state of insolvency; and would have inevitable reactions on the workers as well.

We welcome the Tourist Traffic Act, 1939—designed to regulate and develop the tourist industry—which can, and we hope will, be a source of great wealth to the country. The new Tourist Board has had a most inauspicious beginning under difficult conditions. We have, however, the utmost confidence that the representative directors selected will make the best possible use of any opportunities which present themselves to improve that industry, and we guarantee to them the heartiest co-operation of the Great Southern Railways in their work.

The one bright spot that emerges from the chaos that surrounds us, is that it must now be apparent to the governing authorities, as well as the general public, that the railways are absolutely indispensable to the economic life of the country. The improvement which we may reasonably expect to continue for the period of the war, we know, cannot be permanent. Therefore, we hope for an early declaration of the Government's policy aimed at making possible the continuance of an efficient and progressive public transport system on paying lines.

In this context there is an important aspect of present railway working to which I consider it necessary to refer. Before and after the outbreak of war large volumes of goods traffic—which required urgent facilities—were diverted to the railway and complaints as to shortage of wagons were becoming frequent. Everything possible was done by the company to deal expeditiously with this rush of traffic, but some delays were inevitable. No blame can fairly be attributed to the company for those delays.

For years past, due to diversion of traffic to roads, which, under the conditions that were allowed to persist, your company was utterly unable to prevent, the volume of goods train traffic and revenue had diminished to such an extent, that it was neither possible nor economic to maintain in its entirety rolling stock—built in more prosperous years—which was no longer required. This year, I am glad to say that, due to recent developments, further heavy traffics in beet

grain, millstuffs, coal, etc., are expected—and this increased traffic will of course have to be met by increased expenditure in our workshops, and will also necessitate such further outlay as our cash resources will allow, for the building of new rolling stock. The net results should be a very welcome increase in revenue.

I will now give a brief analysis of the working of the various departments of your company during the past year.

Traffic Department

The total number of passengers carried on the railway during the year 1939 was 7,084,599. The revenue from train passengers was £25,678 less than in 1938, but the revenue from season ticket holders was better by £1,105 in the year.

On April 17, 1939, the Tralee and Dingle section of the railway was closed to passenger traffic, and on the same date the section between Castlegregory Junction and Castlegregory was closed to both goods and passenger traffic. Adequate road services were substituted in the areas mentioned

The receipts from goods train traffic were £2,049,840 compared with £1,856,800 in 1938—a satisfactory increase of £193,640.

The tillage policy of the Government necessitated the transport of more manure in the early part of the year while the output of cement from the factory at Limerick yielded a welcome increase to the traffic receipts.

Towards the latter part of 1939 the unsettled international situation caused traders to accumulate advance stocks of foodstuffs and other commodities in anticipation of a shortage of supplies. The company benefited by this wise purchasing and the increased sea risk in the last quarter of the year diverted a good deal of traffic from coastal shipping to the railway.

The area under beet cultivation in 1939 was less than in 1938 and as a result the tonnage of beet carried was less by 30,730 tons, representing a decrease of £5,686 in receipts. However, I am glad to be able to say that as a result of Government policy a very substantial increase in the beet acreage is already assured in future, which should render this country independent of sugar imports.

Permanent Way Department

The total expenditure in the Chief Engineer's Department on permanent way and works for the year 1939 was £483,014, compared with £480,530 for 1938. During the year 17½ miles of track were renewed, and in addition new sleepers were provided in 34 miles of track.

The foundations for a new modern lift bridge at Sheriff Street, Dublin, have been completed. The dressing back of the cliff adjoining the track at Waterford was continued during the year when 1,140 tons of loose rock were taken down and removed.

Locomotive Department

Two new passenger locomotives of increased power were completed in our workshops at Inchicore and put into our Cork main line service. They have been given the good old Irish names of *Mæve* and *Macha*. A third, to be christened *Tailte*, is nearing completion. These locomotives represent the most modern design of steam engine. Their use has enabled the mail train service to, and from, Cork to be accelerated, and with other improvements in the Locomotive Department, has resulted in reduced coal consumption during the year representing a saving of £3,000. There were also constructed at Inchicore 171 covered goods wagons, two Drumm-battery trains, and 35 single-deck omnibus bodies.

Signalling and Telegraph Department

The installation of colour-light signalling in the Liffey Bridge and Cabra Section has been completed, and the area formerly served by the signal cabins at Kingsbridge, Islandbridge, Liffey Bridge, and Cabra has now been brought under the control of the one cabin at Kingsbridge. Colour-light signalling is now continuous from Kingsbridge, via the Phenix Park tunnel through Amiens Street and Westland Row, to Dun Laoghaire.

Larger engine turntables have been provided at Cork

and Greystones to enable the heavier engines to be turned there, and reduce delays to trains,

General Stores Department

The outbreak of war gave an upward trend to prices, gradual at first, but accelerating as the sources of supply diminished. Our stocks of commodities had been increased before the full shock of rising prices began to operate, but coal, petrol, timber, and sundry materials accounted for increased expenditure of some £30,000.

The total purchases in the year amounted in cost to £898,985. The value of all materials issued during the year from the stores department was £1,077,722.

The company's stock of locomotive coal on January 1, 1939, was 11,000 tons, little more than two weeks' consumption. By the end of August we had accumulated twice that quantity. The value of coal imports during the year was £320,000, of which £13,000 was due to additional costs resulting from the war.

Omnibus Department

The gross receipts from our omnibus traffic once again show an increase over all previous years. The figures are £641,754 in 1939 compared with £629,212 in 1938, an increase of £12,542 for last year. Our omnibuses carried 26½ million passengers during last year. It has to be reported, however, that the increase in the expenditure of the department has also risen. The full force of the wages agreement, which came into operation in July, 1938, was borne in the year 1939, the cost of the agreement being approximately £8,000 per annum.

The other serious feature on the expenditure side is the increased price of petrol. In November last we were paying 6\(^2\)d. per gallon more for petrol than we had been paying in the beginning of the year. Every penny per gallon in increased price costs the company over £10,000 a year, and this increase for a full year means £70,000 additional expenditure in our two road departments.

Road Freight Department

The company's road merchandise services were satisfactorily maintained, and where necessary new services were instituted. Road merchandise services are now operated from 150 depots throughout the country so that the company's vehicles are readily available in every district, and I am glad to say that the public is showing more appreciation of these services as time goes on. In addition to the normal operations, special services were provided for the haulage in the company's road vehicles of over 200,000 tons of the season's beet crop.

I must, however, here refer again to the unsatisfactory conditions under which our road merchandise services have still to be operated, conditions so adverse as to threaten their very existence, when judged on a profit or loss basis. Owing to the increasing labour and operating costs already mentioned and to the continued existence of restrictions and regulations imposed by law on the railway-owned lorries, from which competing road concerns are either exempt, or which they fail to observe, we are approaching the time when we will not be able to maintain those services economically unless the legislative relief we have been pressing for, so continuously, soon materialises.

While the gross receipts from road passenger traffic are not unsatisfactory, the net receipts are gradually being forced down by rising costs, and we feel that present fares and charges, while not unreasonable in normal times, now require some alteration to deal with present conditions. Omnibus charges are subject to statutory control and it may become necessary to approach the Government to introduce a revised scale of charges in the near future. In passing I should like to pay a tribute to the bus drivers for their excellent work during the recent very severe weather conditions when, hampered by fog and frost, the running of the buses was maintained without serious accident.

Hotels Department

Owing to the unsettled conditions which prevailed, the year 1939 was a most difficult one for those engaged in catering for the tourist traffic. The premature closing of the season

on the outbreak of war led to many cancellations of bookings. The hotels' trading figures reflect these adverse and abnormal conditions. In 1939 the hotels' bookings and the refreshment and dining car services, suffered in receipts to the extent of £12,905. Business at the Killarney Hotel was the worst for many years, but at Parknasilla and Mallaranny it was fairly satisfactory.

I think I have now given you a fair survey of the working of your company, and endeavoured to explain as fully as I can its present position. I admit that it is very disappointing that, with so large an increase in gross revenue, no dividends are yet available. I have also stated the causes of our largely increased expenditure, which was unavoidable, and which was accentuated by preceding lean years. The whole position was further aggravated by a shortage of working capital.

Taking a broad view of the whole transport position-and the stupendous difficulties the railway systems have had to face—the wonder is, not that the position is as bad as it is, but rather that it is not a great deal worse.

It has now been confirmed by the recent decision of the Supreme Court-re rates-that while the railway companies were losing a large portion of legitimate traffic, by unregulated and often unfair road competition, they were at the same time compelled to pay rates on an excessive valuation based on an income no longer earned, which in the last three years involved an overpayment of more than a quarter of a million of money.

The Great Southern Railways Company is by far the

largest industrial concern in the country, and provides enployment and maintenance for over 15,000 families. notwithstanding, I repeat once again, that no other business is so hedged about by out-of-date restrictions and regula tions, many of which do not apply to its newly arisen roal

At the time of the last annual general meeting the tribun. set up by the Government to examine and report on the transport systems in Eire-and in particular the circuit stances which led or contributed to the unfavourable final cial position of this company-had just begun its deliber Extensive evidence and information on every aspeof the company's operations since January 1, 1925, we given on behalf of the company. We hope that legislation will soon ensue which will redress the long standing grie ances which I think have now been made quite apparent and that a new era in the transport life of Ireland will begin

In conclusion, I would like to pay a tribute to the work the staff. By the staff, I mean all the employees of the rail and road services from the chief officers down. It has been a trying year for everyone, and I venture to hope that never again will such adverse conditions have to be faced as confronted the company as a whole at the beginning of 1939 The shareholders have suffered most of all, but nevertheles-I feel they would like me to express to the staff, on their behalf, their appreciation and thanks for the loyal service rendered.

The report was adopted.

BELFAST & COUNTY DOWN RAILWAY COMPANY

The annual general meeting of the Belfast & County Down Railway Company was held in Belfast on February 29, Mr. James Hurst, Chairman of the company, presiding.

The Chairman, in moving the adoption of the report and accounts, stressed the importance of the railways and road services, the preservation of which depended on some form of unification being introduced with the necessary protective measures which would result in the resources of rail and road being fully availed of. Failing this, public transport without sufficient business to be self-supporting would require to be subsidised by the Government.

With the laying up of cars, the travelling public would have been very much inconvenienced had it not been for the railways. Moreover, the services rendered to the military authorities had been such as would have been impossible of fulfilment had railways not existed. Further, the fact that provision was made in the present emergency by Act of Parliament for the maintenance of essential railway services. was further proof, if needed, that railways must be maintained and were essential in the public interest.

The position of the company had improved since the outbreak of war, but the other side of the picture was increased expenditure, for during the same period of four months, apart from the question of wages, the costs of coal, oil, stores, and all other materials necessary to the running of the railway, had increased on the average by over 15 per cent. and were still rising.

The total expenditure of the whole undertaking showed an increase of £1,398 as compared with the year 1938.

Net income worked out at £13,478, or £9,153 better than in 1938, but was £2,097 short of meeting fixed charges, debenture interest and interest on the $4\frac{1}{2}$ per cent. "A" preference stocks for the second half of the year, and consequently it had been necessary to transfer to revenue account £2,097 from their settlement of claims compensation

Although the war had benefited the railway in some directions it had also had the opposite effect on excursion traffic, which showed a considerable falling off in receipts for the month following the outbreak of hostilities, as compared with September, 1938. Exclusive of season ticket holders they carried during the year close on three million passengers, and the average fare per passenger was 6.94 pence against 6.47 pence in 1938," said the Chairman.

Merchandise and mineral traffic had increased by over

6,600 tons during the year, the receipts being £2,702 more

than in 1938. There had been, during the year, further increases in their workshop wages costs due to trade union increases and the concession of holidays with pay to more grades of employees. which accounted for an additional expenditure of over £450. The strictest economy was being exercised commensurate with safety in working, and this matter was continuously under review by the directors.

The working of their hotel and refreshment rooms showed a net profit of £2,786, which was £552 less than last year. Up to the end of August the position was well maintained, but there again the outbreak of war had its ill-effect on this

side of the business. I am of opinion, as are my colleagues, that a form of unification is essential if public transport, both road and rail, is to continue to give the service to the public which it has hitherto given, but this is a matter in which further progress cannot be made until some definite decision is come to by the Government, and legislation enacted to give effect to it. In Northern Ireland under normal conditions there is an excess of transport facilities over traffic needs, so that unification in whatever form it may take would ensure traffic being dealt with by that service, either by road or rail, most suitable in the public interest, and would eliminate wasteful competition," added the Chairman.

"It is most important that the Government should, as early as possible, deal with the urgent question of transport. and to some extent free us from the great anxiety which we have experienced during the past few years.

The solution of the transport problem is by no means an easy one, and this matter will continue to receive the most earnest and constant consideration by your directors.'

The report and accounts were adopted.

Forthcoming Meetings

- Mar. 12 (Tues.)—Mersey Railway Company (Ordinary general) Winchester House, Old Broad Street, E.C.2, at noon.
- Mar. 15 (Fri.)—London Midland & Scottish Railway Company (Ordinary general) Friends House, Euston Road, London, N.W., at 11.30 a.m.
- Mar. 15 (Fri.)-London & North Eastern Railway Company
- (Ordinary general) Wharncliffe Rooms, Hotel Great Central, Marylebone, at 2 p.m.

 Mar. 18 (Mon.)—Great Indian Peninsula Railway Annuities (Annul), Elmhyrst, Epsom Road, Guildford, at 11.45 a.m.

 Mar. 20 (Wed.)—Southern Railway Company (Annual general), Southern House, Cannon Street Station, at 11.30 a.m.

Institution of Locomotive Engineers' Annual Dinner

The annual dinner of the Institution Locomotive Engineers was held at the Savoy Hotel, London, on February 28, and was attended by nearly three undred members and guests. The hief guest was Capt. Euan Wallace, Minister of Transport. In the absence wing to illness of the President, Mr. O. V. S. Bulleid, the chair was occupied by Mr. W. A. Stanier, Past President.

Those present at the dinner were :-

Those present at the dinner were:

Messrs. N. Ablett, C. E. Adams, E. Adams, W. A. Agnew, J. F. Alcock, T. J. Aldridge, H. H. Andrews, S. V. Arnold, W. J. Ash, R. M. E. Ashworth, R. M. Atkinson, E. W. Baker, J. Barnard, C. B. Barratt, Major H. P. M. Beames, Messrs. J. E. Beckett, P. F. Bennett, A. Binns, Cdr. W. T. A. Bird, Messrs. H. Bissell, C. J. H. Bolton, L. Boulton, Capt. F. Bramley, Messrs. E. Brearley, C. G. Brighton, E. T. Brook, A. W. Brookes, A. J. S. Brown, Capt. T. T. Brown, Messrs. T. W. Brown, E. Bucklow, M. G. Burrows, J. E. Calverley, A. Campbell, F. W. Carr, H. R. Carver, J. Cave, W. R. Chadburn, H. C. Charnley, A. H. Chilton, I. G. Clarke, Lt.-Col. J. Sealey Clarke, Messrs. J. Clayton, W. Coaker, H. Johnson Coleman, Colonel D. Cockburn, Mr. A. F. Collins, Lt.-Col. F. R. Collins, Messrs. D. F. Cooper, A. G. Corrie, Lt.-Col. C. G. Cotesworth, Mr. H. P. R. Coveney, Sir Charles W. Craven, Mr. S. S. Crocombe, Capt. H. W. Crosthwait, Mr. A. S. Davidson, Lt.-Col. H. Merson Davies, Major V. G. Davies, Messrs. H. W. Davis, J. F. Dawson, F. J. Deacon, C. E. Dee, A. Devon, V. H. Drewry, D. R. Edge, W. S. Edwards, F. O. Ellis, Major R. B. Emerson.

Messrs. E. Fairbrother, C. E. Fairburn, E. G. D. Fawcett, F. T. Fletcher, B. D. Fox, Col. W. S. Fraser, Messrs. P. O. Fryer, M. H. Gabb, W. Galloway, Cdr. H. V. Gaud, Messrs. H. F. S. Gedge, F. Gibbins, P. W. Gibbs, Cdr. W. Gilbert, Messrs. R. K. Glascodine, F. Graham Glover, G. E. Godfrey, C. N. Goodall, W. S. Graff-Baker, Lt.-Col. E. Graham, Messrs. Basil Gray, H. Gresham, J. H. Gresham, J. N. Gresham, S. R. Gresham, W. H. Grieve, A. R. Gundry, R. H. Hamilton-Wickes, F. A. Harper, H. P. Harpler, Major H. A. Harrison, Messrs. C. G. Hasswell, Major C. E. Hatstilow, G. J. Haswell, Major C. E. Hatstilow, G. J.

Graff-Baker, Lt.-Col. É. Graham, Messrs. Basil Gray, H. Gresham, J. H. Gresham, J. N. Gresham, S. R. Gresham, W. H. Grieve, A. R. Gundry, R. H. Hamilton-Wickes, F. A. Harper, H. P. Harper, Major H. A. Harrison, Messrs. Ranald J. Harvey, C. A. E. Hastilow, G. J. Haswell, Major C. E. Hatcher, Messrs. C. G. Hatherley, F. J. Hemming, F. A. Hewson, F. J. Hills, C. W. C. Hine, C. Hitchcock, J. Hobbs, J. W. Hobson, H. Holcroft, Robert Holland-Martin, A. G. Hopking, W. G. Hornett, Major R. Horsfield, Messrs. E. E. How, J. S. Hunter, G. S. Hussey, W. J. Husted, E. O. Ievers, A. C. Illston, C. C. Inglis, P. J. Jessop, W. S. Johnson, J. S. Jones, W. G. Kefford, H. Kelway-Bamber, W. Kelway-Bamber, W. Kelway-Bamber, W. Kent, Count J. A. de Kerdrel, A. J. D. Kitson, G. H. Kitson, C. F. Klapper, W. S. Knight, Capt. A. G. Kyle.

Messrs, C. S. Lake, S. Lal, W. H. Lawrence, L. J. Le Clair, W. Leech, F. C. Ley, C. Lindsay, E. E. Lloyd, E. W. Lonnen, S. P. Loosen, L. Lynes, H. G. McClean, W. F. McDermid, Major R. G. MacIver, Messrs. T. M. Mackenzie, G. Maginness, S. C. Manhire, R. E. Marks, P. E. Marmion, E. W. Marten, F. Mason, Sir R. W. Matthews, Messrs. R. L. Maunsell, G. A. R. Mead, J. B. Melhuish, A. Mertz, J. C. Metcalfe, Eng. Rear-Adml. J. W. Milner, Messrs. H. M. Moffatt, F. H. Morfey, J. H. Moss, Lt.-Col. A. H. L. Mount, Messrs, O. S. Naylor, R. Needham, C. T. Nesbit, H. N. Neville, S. Newman, C. H. Newton, G. R. Nicholson, H. J. Nixon, K. J. Noble, D. O'Neill, Dr. H. O'Neill, Messrs. R. V. Osborne, A. H. C. Page, B. W. Palmer, A. H. Parkes, C. R. Pasley, J. J. C. Paterson, S. J. Payne, K. R. Pearson, R. T. Pemberton, F. J. Popper, F. D. Playford, E. Pollard, E. C. Poultney, K. Preston, A. L. C. Purr, J. Rankin, V. P. Rawlings, J. W. H. Rea, Col. A. S. Redman, Messrs, C. R. Salmon, S. Sanders, T. H. Saunders, C. R. Salmon, S. Sanders, T. H. Saunders, C. R. Salmon, S. Sanders, H. H. Saunders, C. R. Selby, J. W. Sharpe, G. S.

Simmons, R. T. Smith, W. G. Smith, H. Sommerville-Smith, A. H. Sommer, J. E. Spear, B. Spencer, J. C. Spencer, W. A. Stanier, G. J. Steer, A. Stewart, J. A. Stirling, N. Stockbridge, H. J. Stone, T. A. Street, C. Stucke, A. Stuff, T. C. Swallow, Major-General G. S. Szlumper, Messrs. T. J. Tait, N. Tate, Capt. F. Theakston, Messrs. J. H. Thom, R. A. Thom, W. B. Thompson, Sir J. E. Thornycroft, Messrs. Julian S. Tritton, E. M. Turnbull, F. Turner, T. H. Turner, M. W. Tutt, C. Twynam, W. J. Tydeman, J. W. Vaughan, R. L. Vereker, J. F. B. Vidal, Lt.-Col. J. B. Wakeford, Messrs. T. F. Wakley, W. J. Wakley, A. Walker, Capt. the Rt. Hon. Euan Wallace, Eng. Capt. A. E. Waters, Messrs. W. L. Watson, W. Watson, F. L. Welch, F. E. Whitehouse, R. H. Whitelegg, Ivor Whittingham, S. Whyte, J. H. A. Wilkins, A. E. Willox, H. Wilmot, A. J. L. Winchester, E. Windle, F. R. Wix, Sir William V. Wood, Messrs. J. B. Woodman, W. F. Wright, S. J. Young, G. F. Young, H. Zetterström.

Captain Euan Wallace proposed the toast of "The Institution." He said:

Tonight we have here represented in a very concentrated form transport and the manufacture of railway material and munitions. When all is said and done, locomotives today are just as necessary as guns and tanks; and the same people, I understand, are making both—if they are fortunate enough to get the raw material. As a regular soldier I was always taught that the really important thing was to get the overwhelming force to the decisive point; and it is perfectly obvious that no matter how many guns and tanks you manufacture you will not succeed in getting them to the decisive point at the decisive moment unless you have an adequate supply of locomotives.

War has made the most striking and fundamental changes in the relationship between the railways and the Government, and also in the relations between the main-line railways one with the other. In peacetime the Government has no managerial functions.

We have tried not to interfere with the management. Nobody knows better than I do that Ministers and civil servants cannot run railways

I should like to pay a tribute to the Railway Executive Committee which is running the railways of this country as a unified concern in the interests of the national war effort, and that is how they ought to be run today.

Tonight you were to have had Mr. Bulleid in the chair, and I know that I am only expressing your feelings when I say that we hope that he is not seriously indisposed and that he will be soon restored to health. If Mr. Bulleid had been in the chair tonight, I should have liked to pay some tribute to the special responsibilities of the Southern Railway and to the particular responsibilities of its Locomotive Department in the transport of our forces to all kinds of destinations which some of us know but which none of us dares mention

In giving you the toast of this great institution, therefore, I feel that this is a night above all others when we may

well recognise that this is not a sectional institution; it is not only a national institution but an international institution. It is in this spirit that I should like to ask you to drink its health, coupled with the name of one of its most distinguished members, Mr. W. A. Stanier, who, in the true spirit of all locomotive engineers, has rushed in at the last moment to fill an awkward breach.

The Chairman (Mr. W. A. Stanier), who responded, said: First of all, should like to apologise for Mr. Bulleid, who has sent a telegram: "Temperature down, heart 100 per cent, with you. I am sure you are having a great evening. Hope Captain Wallace has had extra applause for coming to the dinner under present conditions.

The Chairman then went on to propose the toast of "The Transportation Forces of the Crown.

He said: I give that toast particularly because so many of us are associated in one way or another with those forces, which are now so ably directed as far as transportation is concerned by our good friend Major-General Szlumper.

Major-General Gilbert Szlumper, replying, said: The Forces of the Crown have moved to some purpose, because not only have there been transported to France thousands of men, but also multitudes of stores, and every other sort of commodity of war; that has been done without holding up a single ship, without delaying a single ship arriving at its berth for loading and without a single ship having missed its convoy

Mr. Julian S. Tritton proposed the toast of "The Guests" in a humorous speech in which he contrasted the lot of those who had ridden on the foot-

plate with those who had not. Sir Charles Craven, who responded, said: I imagine that I have been asked to speak tonight because I happen to be President of another great organisation dealing with the engineering industry; and perhaps you will not mind if for a few minutes I speak to you quite seriously about some of the problems that face those of us who have to deal with getting more labour into our great industry. I wonder whether you all know that it was before war was declared that the Engineering Federation came to an arrangement with the trade unions on what I call dilution of labour, but what they called relaxation of existing conditions in an emergency. Many of you will remember that the trade unions thought, and I think perhaps thought rightly in some directions, that they did not have quite a square deal last time. I see here tonight a representative of one of the great trade unions who has carried out many negotiations with me across the table. Incidentally, I am generally rather silent when the negotiations are taking place, and so is he; but at any rate I am sure that he will tell you, or will tell those sitting near him, that he believes that this time we have entered into a mutually free agreement that will be honoured by both sides.

QUESTIONS IN PARLIAMENT

Rationing for Railwaymen

Mr. W. Dobbie (Rotherham-Lab.), on February 21, asked the Minister of Food whether having regard to the proposal to extend food rationing, and the difficulties experienced by railwaymen who had to lodge away from home alternate days owing to being employed on double-home shifts of duty, he would make special provision to meet the circumstances.

Mr. W. S. Morrison (Minister of Food) : I do not consider that the circumstances referred to call for special provision under the present rationing scheme, but I will look further into the matter.

Sleepers on Stranraer Boat Trains

Dr. Little (Down-C.), on February 26, asked the Minister of Transport whether he would consider the urgency and necessity of providing third class sleeping accommodation on the boat trains to and from Stranraer: and whether he would have such accommodation made available at the earliest possible moment in the interests of travellers, both military and civilian, who desire such travelling facilities.

Captain Euan Wallace (Minister of Transport): I am advised that there is insufficient demand for third class sleeping accommodation to justify the attachment of a third class sleeping car, more especially as its inclusion would often make it necessary to divide the train. A car was provided during the Christmas holidays, but on only one night was it anything like fully occupied

Transport of Coal

Mr. E. Shinwell (Durham, Seaham-Lab.), on February 26, asked the Minister of Transport what progress he had made with the railway companies on the transport of coal; and what was the present position.

Mr. R. H. Bernays (Parliamentary Secretary to the Ministry of Transport): Over the weekend 52,405 wagons of coal, or over half a million tons, were removed by the L.M.S.R. and the L.N.E.R. from colliery sidings, and practically the whole of the accumulations due to the bad weather have now been dealt with. The programme of special trains to which I referred on Wednesday last commenced today from the Midland collieries. The special trains from Northumberland and Durham necessitate the working of empty trains to the coalfields and the trains are expected to begin to work south from the collieries on Thursday.

Mr. Shinwell: Will the Parliamentary Secretary make representations to the Minister of Transport to secure that empty wagons are returned as promptly as possible, so that miners may have an opportunity of gaining regular employment?

Mr. Bernays: Yes, Sir. That is why we made the demurrage regulations.

Mr. F. C. Watkins (Hackney Central -Lab.): May I ask the hon. gentleman whether his reply means that people in London who have been without coal for three or four weeks can now get it?

Mr. Bernays: I think the position has materially eased in the last few days. I have not got the full details of the arrival of wagons, but I have a figure here which may interest the House. This weekend 8,925 wagons were received by the Southern Railway Company as compared with 4.011 in the corresponding weekend last year, and I am sure the hon, gentleman will see the significance of that figure.

Railway Wagons

Mr. James Griffiths (Llanelly-Lab.), on February 28, asked the Minister of Transport what steps were being taken by him to increase the production of wagons; and whether the wagonbuilding industry was being used to its full capacity at present.

Captain Euan Wallace (Minister of Transport): This matter is constantly consideration by my Department in conjunction with that of my rt. hon. friend, the Minister of Supply. The production of railway wagons has to be viewed in relation to other demands upon materials and the productive capacity of the country, but I understand that at present the wagonbuilding industry is fully employed.

London Electrification Extensions

Mr. J. Parker (Essex, Romford-Lab.), on February 28, Minister of Transport what progress had been made with the extension of the Central London Line from Liverpool Street to Newbury Park; when it was hoped to open the sections to Mile End and Stratford, respectively; and what was the position with regard to the electrification of the L.N.E.R. suburban lines from Liverpool Street to Sherfield.

Captain Euan Wallace: Most of the tunnelling work between Liverpool Street and Newbury Park has been completed. According to present plans it is hoped that the electrified line will be opened to traffic as far as Loughton. including the section between Mile End and Stratford, before the end of this year, and that the section from Leytonstone to Newbury Park and thence round the Fairlop loop will be opened in the spring of next year. The hon. member will, however, realise that in the present circumstances these dates cannot be guaranteed. Certain works have been completed in connection with the electrification of the suburban lines from Liverpool Street to Shenfield, but it has been necessary to defer the remainder of the work until after

Railway Finance Corporation

the war.

Mr. R. De La Bere (Evesham-C.) asked the Financial Secretary to the Treasury whether, in connection with the board of directors of the Railway

Finance Corporation Limited, which consists of five members, four of whom are directors and the fifth the Class Cashier of the Bank of England, he would consider nominating one more independent directors, since the Treasury was committed by guarantee as to both principal and interest for a sum exceeding £26,000,000 which this company, with an authorised and issued capital of £100 in shares of each, had lent to the four main-line railways.

Captain H. C. F. Crookshar (Financial Secretary to the Treasury Crookshand The appointment of the present dire tors was approved by the Treasury and no change is required. The Railway Finance Corporation is a convenient piece of technical machinere for giving effect to the agreement between the Treasury and the railway companies which is set out in the schedule to the Railways (Agreement)

Act, 1935.

L.N.E.R. Sleeping Cars

Mr. J. Parker (Essex, Romford-Lab.), on February 29, asked the Minister of Transport why the third class sleeper service on night trains to Scotland was to be withdrawn from March 4; whether he was aware that this would cause passengers great inconvenience; and whether the decision could be reconsidered.

Captain Euan Wallace: The withdrawal of certain passenger services on the L.N.E.R. in order to enable the conveyance of a greatly increased tonnage of coal by rail has made it necessary to substitute ordinary coaches for third class sleeping cars on the night trains from King's Cross to Scotland so as to provide a greater amount of accommodation on the trains. The existing sleeping car accommodation on the L.M.S.R. services between London and Scotland is being supplemented by an additional service between Euston and Edinburgh on which three first class and two third class sleeping cars will be provided.

Special Coal Trains

Mr. J. Batey (Spennymoor-Lab.), on February 29, asked the Minister of Transport how many trains of coal ran from the North of England to London or the South, on Monday, February 26.

Captain Euan Wallace: As was indicated by my hon, friend the Parlia-mentary Secretary on February 26, the special trains from Northumberland and Durham to London and the South will not begin to run until today. During the early days of this week it was necessary to work empty wagons to the collieries. I have no precise information as to the amount of coal brought from Northumberland and Durham to London and the South in the course of normal working on the date in question, and I hope the hon. member will not press me to undertake this extra research.

Loans for British Railways in Brazil

[FROM OUR SPECIAL CORRESPONDENT IN BRAZIL]

It is now possible to publish the terms under which the loans to the Great Western and Leopoldina Railways of Brazil, briefly referred to in THE RAILWAY GAZETTE of August 25, 1939, were granted by the Brazilian Covernment. The President of the Republic, in pursuance of the faculties conferred upon him by Article No. 180 f the Constitution, and considering that in the case of the Great Western,

(a) the equipment of the railways of the country was one of the first and indispensable conditions of progress

(b) that, in a message dated January 6, 337, addressed to the then House of Deputies, the Government, in view of the economic requirements of the four northwestern states served by the Great Western Railway, requested authorisation to grant financial aid to railway to enable it to make transport improvements demanded

by local industries and commerce:

(c) that the Federal Inspectorate of Railways had confirmed the necessity of the improvements and estimated their cost at 40,000 contos of reis:

(d) that the adoption of a unified regime of rates and fares and administration on the Estrada de Ferro Rio Grande do Norte and the line from Natal to Nova Cruz would be of advantage to the economical development of the State of Rio Grande do Norte:

(e) that the exploitation of traffic on these lines by a unified administration could be done more economically and with more efficient use of rolling stock,

decreed as follows

Article 1

Art. 1 The Union grants a loan of 40,000 contos of reis to the Great Western Railway for the restoration, improvement, and equipment of its lines and rolling stock.

par. 1 The loan will be made in four yearly instalments of 10,000 contos of reis, for which purpose that amount will be included in the Ministry of Transport budget up to 1942 inclusive.

The programme of purchases be submitted to the Ministry of Transport.

par. 3 At the beginning of each year

the sum of 10,000 contos of reis will be handed to the company which will deposit it in the Bank of Brazil exclusively for the purpose of meeting the cost of wor carried out under the terms of the loan.

par. 4 The Federal Inspectorate of Railways will make a special audit every year and certify as to the bona fides of the purchases made and amounts spent.

par. 5 The refund of the loan will be

made in instalments out of traffic receipts for which purpose all profits exceeding 6 per cent. on capital will be handed over to the national Treasury.

par. 6 Profits are understood to mean the excess of gross receipts over ordinary and extraordinary expenses of operation and renovations, and interest on and amor-tisation of debentures and capital.

par. 7 As the loan is to be used exclusively in the cost of restoration and improvements of property of the Union leased to the company no product of the loan may be carried to capital account, or taken into account in the case of an eventual reversion to the State.

Article 2

Art. 2 As a result of the company agreeing to withdraw its claims registered on the occasion of audits, in regard to the fulfilment of the contract dated September 20, 1920, the Minister of Transport is hereby authorised to modify this contract in conformity with the following terms:—

par. 1 The section of 121 km., between Natal and Nova Cruz in the State of Rio Grande do Norte, together with all rolling stock in permanent service thereon, shall be disconnected from the lines mentioned in clause 2 of the contract which were considered under the jurisdiction of the considered under the jurisdiction of the company, and incorporated into the Central do Rio Grande do Norte.

par. 2 Whatever part of the company's recognised capital may not have been constituted that the company of the company of

recognised capital may not have been amortised during the time that the contract is in force, due to insufficient net balances as verified in the audits, will be indemnified by the Government in Federal Public Debt five per cent. bonds at the price ruling at the time on the Rio de Janeiro stock exchange.

Article 3

Art. 3 All the clauses of the lease contract approved by Decree No. 14,326 of August 24, 1920, which do not contravene the present decree continue in force.

Article 4

A special credit of 10,000 contos of reis is already opened up by the Ministry of Transport wherewith to fulfil the terms of par. 2, Art. 1 of this decree.

Article 5

Art. 5 The General Accounts Department of the Republic will debit the Great Western of Brazil Railway Co. Ltd. in its registers with the instalments paid, and credit it with any amounts received by the National Treasury.

In the case of the Leopoldina Railway, the considerations put forward as a preamble to the decree were that.

(a) in a message dated January 6, 1937, addressed to the then House of Deputies, the Government, in the interests of national economy, had asked for authorisation to help the Leopoldina Railway Co. Ltd.,

which was undergoing a financial crisis;
(b) the message was based on careful examination of the situation by the Ministries of Transport, and Finance, as borne out by their reports dated October 31, November 11, and December 27, 1936;

(c) the commission formed on November 17, 1934, by the Minister of Transport, to examine the financial situation of the company, had concluded that:

(1) The financial situation had been one

progressive desequilibrium since 1930.

(2) The exchange feater (2) The exchange factor had greatly contributed to the bad financial situation and prohibited a sufficient return on capital, in addition to which, balances in currency were being continually reduced due to increased expenditure and decreased receipts per traffic unit.

(3) The increase in expenditure was not due to bad administration on the part of the company, which, on the contrary, executed its services without exaggerated costs, and was even under a regime of forced economy, but, while this had not affected its transport services, it would not be wise to allow it to continue.

(4) The commission could not find anything in operating costs which, if suppressed, would contribute appreciably to an improvement of the situation.

(5) The predominating causes of the decrease in local currency receipts were the reduced ad valorem surcharge on coffee freights, and the decrease, not only in volume, but also in freight, of goods and parcels classified in the more remunerative schedules as a result of competitive means of transport. The ways and means at the disposal of the company had not been sufficient to counteract these influences.

(6) The tendency in regard to any increase in traffic was to increase instead of to reduce the desequilibrium, because of the accentuated preponderance of non-remunerative merchandise.

(7) It was noticeable that due to lack of sufficient receipts the railway already found it difficult to maintain itself conveniently equipped with the tractive and

rolling stock to meet increased traffic.

(d) Up to December 31, 1936, the company had already sunk £16,900,753 in the construction and equipment of 3,086 km. of line, 1,834 of which reverted to the government without onus on the termina-tion of the respective concessions.

The serious difficulties referred to in the Presidential message had been aggra-vated and the company was unable to remove them.

(f) Being Federal services in accordance with Decree 875 of November 22, 1938, the railway should not be hampered by State and Municipal taxes.

(g) Although it was necessary to equip the railways of the country in a way which would enable them to offer economical and efficient transport the persistence of un-favourable factors arising out of the present crisis had undermined credit, making it

impossible to raise new capital.

(h) In collective interests, the Constitution of the Republic established that public utility undertakings, exploited under concessions, should be allowed to produce a just and adequate remuneration of capital and provide for improvements.

The President of the Republic therefore decreed that:

Article 1

Art. 1 The Union grants the Leopoldina Railway Co. Ltd. a loan of 30,000 contos of reis on the following conditions

(a) The loan shall be used in the equip-(a) The loan shall be used in the equipment of workshops, acquisition of rails, locomotives, and rolling stock; in the perfection of signalling installation, reform and/or substitution of old bridges, and

relaying of permanent way.

(b) The Government, through the Ministry of Transport, will control purchases and works carried out through the loan.

(c) The loan will be made in three yearly

instalments of 10,000 contos of reis, dating from 1939, in accordance with works under-taken and purchases approved by the Minister of Transport who will include these amounts in his budgets for 1940 and 1941.

(d) The company may invite tenders for

material necessary which must be submitted to the Ministry of Transport for approval. All payments will be made from the credits

opened for the purpose.

(e) The time limit for the completion of works will be 3 years counted from the date of approval of the various programmes.

Article 2

Art. 2 The refund of the loan will be made in instalments out of any traffic receipts which exceed what is necessary to

pay a return of 6 per cent. on capital.

Traffic receipts referred to in the foregoing article are understood to mean the excess of gross receipts over ordinary and extraordinary expenses of operation and renovations as also interest on and amortisation of debentures and capital.

Art. 3 Payments made out of this loan will not be carried to capital account nor considered on the occasion of the takingover by the Government.

Art. 4 A special credit of 10,000 contos of reis is opened by the Ministry of Transport wherewith to fulfil the terms of c, Art. 1, of this decree.

Article 5

Art. 5 The General Accounts Department of the Republic will debit the Leopoldina Railway Co. Ltd. in its registers with the instalments paid and credit it with any amounts refunded under Art. 2.

British and Irish Railway Stocks and Shares

	32		Pr	rices
Stocks	Higher 1939	Lowes 1939	Mar. 5, 1940	Rise / Fall
G.W.R. Cons. Ord 5% Con. Pref. 5% Red. Pref. (1950) 4% Deb 44% Deb 5% Deb 24% Deb 5% Rt. Charge 5% Cons. Guar	38 92 98 103 105½ 110 121 63¼ 117	21½ 71 83 91 93¾ 99 109⅓ 54 104 96⅓	45½ 101½ 101½ 103½ 107½ 111 123½ 65½ 116	-1½ +1 -1 -1 -1 -1 -1 -1
L.M.S.R. Ord	46‡ 63‡ 83 98‡ 109 87‡	9½ 20 37½ 58¼ 85 101¼ 73	19¼ 53½ 63½ 90 97½ 107 91½	-1 -2 -3
L.N.E.R. So, Pref. Ord. Def. Ord. 4%, First Pref. 4%, Sirst Pref. 4%, Second Pref. 5%, Red. Pref. (1955) 4%, First Guar. 4% Second Guar. 3% Deb. 5%, Red. Deb. (1947) 5%, Red. Deb. (1947) 44%, Sinking Fund Red. Deb.	54 32 38 15 55 78 68 68 68 71 16 104 104	3 to 1 to	5 - 2 - 3 - 4 + 5 - 2 - 3 - 4 + 7 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 -	-14 -3 -3 -3 -3 -2 -2
SOUTHERN Pref. Ord Def. Ord 5% Pref 5% Red. Pref. (1964) 5% Red. Pref. (1957) 4% Deb.	78 194 100 102 16 1164 1124	46½ 7 76 94 103 102½	73* 18¼* 102½* 100½* 113*	-3 -13 -1 -1 -2 -11
4% Deb	103 118‡ 106	91½ 109½ 98	101½ 123½ 105½	-2
4% Red. Deb. (1970- 80)	102	96	1041	-
FORTH BRIDGE 4% Deb 4% Guar	98 11 95	81	90½ 90½	=
L.P.T.B. 41% "A" 5% "A" 41% "T.F.A." 5% "B"	115 123 105 117½ 84	103 106	113½ 120½ 104 109½ 46	-1 -3 -11
MERSEY Ord	24 ¹⁷ / ₃₂ 93 ⁸ / ₇₇ 55	17¼ 88¼ 65¼ 49¼	24½* 91 64½ 54½*	+3
IRELAND BELFAST & C.D.				
	6	3	4	-
G. NORTHERN Ord	6	2½	41	-
C COUTUERN	13½ 26 40½ 57	8 10 22 45	11 22½ 33 53	++-

ex dividend

NOTES AND NEWS

Cumberland Landslide. - The L.M.S.R. line between Workington and Whitehaven, which has been blocked since the beginning of February as a result of a landslide at Lowca, was reopened on March 4.

Bletchley Accident, L.M.S.R. In the summary of Colonel Mount's report on this accident in our issue of March 1, the words "the shunter" were accidentally omitted before the words "got clear from between the vehicles" near the top of the second near the top of the second paragraph of the left hand column on

Canadian Pacific Earnings .- Gross earnings of the Canadian Pacific Railway for January, 1940, amounted to \$12,245,000, an increase of \$2,546,000 in comparison with January, Working expenses totalled \$10,416,000, or \$1,178,000 more, leaving net earnings \$1,368,000 higher, at \$1,829,000.

Canadian National Earnings. Gross earnings of the Canadian National Railways in January, 1940, were \$17,601,735, an increase of \$4,106,730 in comparison with January, 1939. amounted to Operating expenses \$15,929,939, with an increase \$1,826,738, resulting in net earnings of \$1,671,796, which compared with a deficit of \$608,196 for January, 1939.

Canal Carriers and War .- At the annual meeting of the Manchester Ship Canal Company held in Manchester on February 26, Sir Frederick J. West said that road transport competition had been the main cause of the shrinkage in revenue from the Bridgewater Canal in recent years. Proposals for co-ordination had been formulated by the Transport Advisory Council just before the outbreak of war, in consequence of the "square deal" demands the railways, and these proposals, if given effect, would probably have given some protection to the canals. Canal carriers were faced with rising costs and in many cases they could not afford to carry at existing rates. these conditions persisted they were in danger of being forced out of business. This matter had been ventilated with the Government and in Parliament, and it was hoped that steps would soon be taken to apply a remedy.

Railway Accident in Japan. bridge between two tunnels on the Japanese Government Railways in the Yamagati Prefecture was destroyed by an avalanche, and on March 5 the locamotive and part of a train emerging from one of the tunnels plunged into the river bed 75 ft. below. It is reported that 37 passengers lost their lives

Irish Railway Operating Ratios. The respective percentages of working expenses in relation to traffic receipts on the following Irish railways in the year 1939 have been supplied to us by the County Donegal Rall-ways: Belfast & Co. Down, 97:17 (103.42 for 1938); County Donegal 75.66 (81.85); Great Northern, 92.97 (98.80); Great Southern, 89.66 (92.41); Londonderry & Lough Swilly, 115-22 (121-90); Northern Counties Committee, 98-71 (105-98); Sligo, Leitrim & Northern Counties, 108.22 (108.85). The operating ratio of the Clogher Valley Railway for the year ended September 30, 1939, was 108.22 compared with 264.64 per cent. for the previous year.

Northern Ireland Traffics.-Total passengers (excluding season ticket holders) on railways wholly in Northern Ireland during the first eleven months of 1939 were 5,242,529, a decline of 150,285 on the corresponding period of 1938, but receipts were £22,519 higher at £292,282. Merchandise and minerals conveyed in the first eleven months of 1939 were 520,273 tons, an increase of 68,775; the number of livestock rose by 486 to 213,612, and the total goods traffic receipts were greater by £23,783 at £194,454. On railways partly in Northern Ireland, ordinary passengers rose 22,550 to 5,188,957, and receipts from passenger trains were better by £2,494 at £443,577. Merchandise and minerals were 1,062,523 tons or 204.311 tons more. There was an increase in livestock carried of 13,774 to 710,364. Total receipts from goods traffic rose £97,086 to £662,969.

Irish Traffic Returns

IRELAND		Tota	ls for 8th W	eek		Totals to Date					
		1940	940 1939		or Dec.	1940	1939	Inc. or Dec.			
Belfast & C.D. (80 miles)	pass. goods total	£ 1,931 470 2,401	£ 1,586 402 1,988	+ + + +	£ 345 68 413	£ 15,805 3,834 19,639	£ 13,061 3,149 16,210	+++	£ 2,744 685 3,429		
Great Northern (543 miles)	pass. goods total	9,050 12,050 21,100	7,900 10,600 18,500	+++	1,150 1,450 2,600	71,750 87,800 159,550	63,400 75,850 139,250	++++	8,350 11,950 20,300		
Great Southern (2,076 miles)	pass. goods total	24,929 42,143 67,072	26,675 41,407 68,082	-+-	1,746 736 1,010	221,924 330,220 552,144	220,689 322,116 542,805	++++	1,235 8,104 9,339		
L.M.S.R. (N.C.C.) (271 miles)	pass. goods total	3,840 3,840 7,680	2,850 2,870 5,720	++++	990 970 1,960	28,920 24,950 53,870	23,910 21,320 45,230	+++	5,010 3,630 8,640		

OFFICIAL NOTICES

Universal Directory of Railway Officials and Railway Year Book 45th Annual Edition, 1939-40

This unique publication gives the names of all the principal railway officers throughout the world together with essential particulars of the systems with which they are connected. Much general and statistical information about railways is also concisely

Price 20/- net.

THE DIRECTORY PUBLISHING CO., LTD. 33, Tothill Street, Westminster, S.W.1

Southern Railway Company

NOTICE IS HEREBY GIVEN that the Annual General Meeting of the Southern R: NOTICE IS HEREBY GIVEN that the next
Annual General Meeting of the Southern Railway
Company will be held at Southern House, Cannon
Street Station, in the City of London, on Wednesday
the 20th day of March, 1940, at 11,30 a.m., for the
purpose of receiving the Accounts for the past year
and transacting general business.

T. E. BRAIN,

Acting Secretary.
Waterloo Station London.**

OFFICIAL ADVERTISEMENTS

OFFICIAL ADVERTISEMENTS intended for insertion on this page should be sent in as early in the week as possible. The latest time for receiving official advertisements for this page for the current week's issue is noon on Wednesday, All advertisements should be addressed to:—The Railway Gazette, 33, Tothill Street, Westminster. London, S.W.1.

Contracts and Tenders

The Chilean State Railways have placed an order with the American Locomotive Company for ten heavy 5 ft. 6 in.-gauge 4-8-2 locomotives.

The Metropolitan-Cammell Carriage & Wagon Co. Ltd. has received an order from Stewarts and Lloyds Limited for 45 all-steel 15-ton either-side tipping

The Egyptian State Railways are enquiring for the following items :-

4 copper plates (E.S.R. No. 6,392). Tubes, pipes and fittings (E.S.R. No. 17.298). 50 cast steel axleboxes (E.S.R. No. 21.1166).

The Egyptian State Railways have placed the following orders :

T. Bolton & Sons Limited: Copper round

bars, and copper and brass bars.
Callender's Cable & Construction Co. Ltd.:
Wire, cable and cord.

Wire, cable and cord.
Steel, Peech & Tozer: Special tool steel.
British Iron & Steel Corporation Limited:
Mild steel rounds (£2,160).
Charles Richards & Sons Limited: Spindles

(4.818).

Gross, Sherwood & Heald Limited, Barking: Paint.

The South African Railways have placed an order for three bogie well wagons with the S.A. La Brugeoise et Nicaise & Delcuve, Belgium.

The South Indian Railway has placed the following orders to the inspection of Messrs. Robert White & Partners :-

J. Stone & Co. Ltd.: 5 train lighting dynamos. 190 alkaline cells for

train lighting.
P. & W. MacLellan Limited: 16 tons of steel

Rhodes & Cartwright: 950 galvanised steel

Knodes & Cartholder & Color &

copper rods.
Linley & Co. Ltd.: 7 cwt. of copper tubes.

Sulzer Bros., of Winterthur, nounces that it has recently disposed of its German works, situated at Ludwigs-

Bakelite Limited has acquired the works and business of Warerite Limited, of Ware, Herts, a company which has been engaged in the manufacture of synthetic resin laminated sheet materials. This acquisition will assist the new owners to meet the growing demand for Bakelite laminated.

The South African Railways are enquiring for steel plates. (Tender No. 2565, April 1. D.O.T. No. T. 16630/40.)

The India Stores Department is enquiring for rail anchors for use on the North Western Railway. (Contract No. N-1027, March 18; D.O.T. No. T. 16820/40.)

The Canadian National Railways are calling for tenders for 150 ballast wagons, 25 baggage cars, and 5 mail and express cars.

The Birmingham Railway Carriage & Wagon Co. Ltd. has received from the Crown Agents for the Colonies an order for 22 carriage underframes complete with bogies, for service on the Federated Malay States Railways.

The Bengal-Nagpur Railway has placed the following orders :-

Caprotti Valve Gears Limited: Sanders for

G.C.S. and N. class locos.

Associated Locomotive Equipment Limited;
Cylinders for H.M.V. and N. class locos.

Murex Welding Processes Limited; Welding

The title of Greenwood's Ventilating Co. Ltd., of Abbeydale Road, Wembley, is now changed to Greenwood's and Airvac Ventilating Co. Ltd. As from March 1, all outstanding and future transactions will be dealt with accordingly.

South African Tenders.—The Board of Trade Journal dated February 29, contains a notice of amended tender conditions applicable during the war, which have been drawn up by the Government of the Union of South Africa.

Railway and Other Reports

London Midland & Scottish Stock Conversion Trust.-The trustees announce that the dividend declared by the L.M.S.R. on its ordinary stock will permit of a dividend of £1 6s. 111d. per cent., less tax at 7s. on the 4 per cent. non-cumulative preference stocks of the trust, against nil a year ago.

Northern Counties Committee (L.M.S.R.) .- In the table which accompanied our comment on the results for 1939 of the Northern Counties Committee (L.M.S.R.) "Gross receipts from businesses" in 1937 should have been given as £469,338. Miscellaneous receipts (net) for 1939, as given in the table, were £19,511, an increase of £10,998 on the figure of £8,513 for 1938.

London & North Eastern Railway Company.—The secretary writes under date of March 1: At a meeting of the board of the London & North Eastern Railway Company today, the net revenue position of the company for 1939 was considered and the directors recommend that dividends be paid for the past year at the following rates: 4 per cent. actual on the 4 per cent. first preference stock, 5 per cent. actual on the 5 per cent. redeemable preference stock (1955), 3 per cent. actual on the 4 per cent. second preference stock, in each case less income tax at 7s. in the The warrants for these dividends will be posted on March 27. A comparison of the net revenue of the year 1939. subject to final audit, with the year 1938, is given as under, viz. :-

Net revenue Brought forward from p	 oreviou	 us year	***		***	***	1939 £ 9,271,030 86,054	1938 £ 6,653,167 83,926	Increase £ 2,617,863 2,128	Decrease £
Interest on debenture s	tocks a	ind othe	rpric	or charg	ges	***	9,357,084 4,217,560	6,737,093 4,220,487	2,619,991	2,927
Available for dividends	***	***	***	***	***		5,139,524	2,516,606	2,622,918	
Allocation: 4 per cent. first guar: 4 per cent. second gu 4 per cent. first prefe 5 per cent. redeemab 4 per cent. second pre	arante rence le pref	ed stock stock erence st	ock (1,322,673 1,107,879 1,928,907 200,720	1,322,673	1,928,907 200,720	=
per annum Carried forward					* her		496,066 83,279	86,054	496,066	2,775
						-	5,139,524	2,516,606	2,622,918	-

Making an increase in net receipts for the eight months of

Railway Share Market

Following the announcement of the terms of the important new Government loan, which was well received in the market, chief attention centred on gilt-edged securities. Other sections of the Stock Exchange have been less active, and following the buoyant trend in evidence during recent weeks, a moderate, but fairly wide-spread reaction has been shown. Sentiment is tending to be influenced by a disposition to await the Budget, but selling was not heavy, and the rather lower prices are attributed mainly to a falling off in demand. Apart from debentures, which reflected the firmness in leading investment securities, home railway stocks were lower in sympathy with the surrounding market trend. It is realised, however, that stocks of the preference and ordinary class give yields which are very attractive when compared with those obtainable on industrial and other securities. Moreover, in view of the financial arrangements with the Government, the main line railways are one of the few groups of companies whose income and dividend prospects can be assessed during the period of the war.

D sappointment with the dividend on I.N E.R. second preference stock, which was below market estimates, has affected sentiment for the time being, but this may

prove only a temporary development. It is believed that receipts of the L.N.E.R. and the other main line companies are likely to continue on the up-grade for the current year, and the assumption is that, in respect of 1940, L.N.E.R. second preference should receive its full distribution. This stock, which was 21 a week ago, has declined to 17½xd, while the first preference reacted to 52xd, compared with 56. The preferred stock was 5½ and the deferred 2½. On balance the first guaranteed showed a decline of 1½ points to 83, and the second guaranteed went back by a similar amount to 72; in both cases yields are regarded as relatively generous. L.N.E.R. 3 per cent. debentures were better at 71½, as were the 4 per cent. debentures at 95. Southern deferred declined from 19½ to 18½, but this was due partly to reduction of the dividend. The preferred stock, now also "xd," was 73¼, as against 76½ a week ago, and the yield offered is considered in the market to be attractive. Although xd, the guaranteed stock remained at 114½, and the preference stock at 102½ was virtually unchanged, while the 4 per cent. debentures were around 101¼. L.M.S.R. 4 per cent. debentures at 107, were maintained in price; the guaranteed stock kept at 92.

On the other hand, a decline from 66 to 63½ was shown by the senior preference, and the 1923 preference was 1½ points down at 54. The ordinary stock, 20¾ week ago, has since made the reduced price of 19½. As regards Great Western ordinary there has been a reaction from 47 to 45½; the guaranteed stock remained at 114½, and the preference was virtually unchanged at 101. In the case of the 4 per cent. debentures, however, dealingwere around the rather lower level of 10%. On balance, London Transport "Comoved down two points to 45½ and the 5 per cent." B" also lost two points at 110½. In accordance with the prevailing tendency outside the gilt-edged market, Argorica and other South American religious desires and other South American religious desired and the religious d

In accordance with the prevailing tendency outside the gilt-edged market, Argentine and other South American railway stocks were easier. This, however, applied mainly to ordinary and preference issues, and although less firm than recently, movements in debentures were mostly in favour of holders. B.A. Western 4 per cents were 65½, compared with 62½ a week ago, while B.A. Gt. Southern 4 per cents and B.A. & Pacific 4 per cents at 68 and 70 respectively were a point higher on balance. San Paulo ordinary was firmer at 42. Elsewhere further gains were recorded in Canadian Pacific shares and preference stock.

Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

				Traffic	or Week	eeks	Agg	regate Traffics t	o Date			Pri	ces	
	Railways	ailways Open Ending			3	Totals			Shares	35	3.0	in vin		
		1939-40	Ending	Total this year	inc. or Dec. compared with 1939	No. of	This Year	Last Year	Increase or Decrease	Stock	Highest 1939	Lowest 1939	Mar. 5, 1940	Yield (See
	Antofagasta (Chili) & Bolivia Argentine North Eastern Bolivar	174	25.2.40 24.2.40 Jan. 1940	£ 16,200 ps. 127,100 3,700	+ 4,720 - ps. 4,600 + 300	8 35 4	£ 145,900 ps. 5,260,700 3,700	£ 100,110 ps. 5,439,900 3,400	+ 45,790 - ps. 179,200 + 300	Ord. Stk. 6 p.c. Deb. Bonds.	108 41 71 51	4½ 2 5¾ 4½	11 3½ 7 6	Nil Nil Nil 8-2
-	Buenos Ayres & Pacific Buenos Aires Central Buenos Ayres Gt. Southern Buenos Ayres Western Central Argentine Do	5,082 1,930 3,700	24.2.40 20.1.40 24.2.40 24.2.40 24.2.40	ps.1,870,000 \$85,800 ps.3,116,000 ps. 831,000 ps.1,660,250	+ ps. 50,000 - \$5,100 + ps.710,000 + ps 102,000 - ps.343,500	35 30 35 35 35	ps.45,063,000 \$3,080,700 ps.78,506,000 ps.26,421,000 ps.60,856,750	ps.45,925,000 \$3,308,600 p.77,825,000 ps. 24,272,000 ps. 64,131,450	- ps. 862,000 - \$227,900 + ps. 681,000 + ps. 2,149,000 - ps. 3,274,700		51 14 138 101 111	2 8 4 4 4	13± 10 8 8	22222
Central America	Cent. Uruguay of M. Video Costa Rica Dorada Entre Rios Great Western of Brazil International of Cl. Amer	188 70 810 1,016	24.2.40 Nov. 1939 Jan. 1940 24.2.40 24.2.40 Jan. 1940	26,904 16,055 12,200 ps. 224,500 13,800 \$565,491	+ 9,014 - 1,709 - 1,100 + ps. 28,600 + 3,800 + \$17,218	35 21 4 35 8 4	701,194 88,364 12,200 ps. 8,405,300 109,000 \$565,491	635,600 112,640 13,300 ps. 8,785,500 93,900 \$548,273	+ 65,594 - 24,276 - 1,100 - ps. 380,200 + 15,100 + 817,218	Ord. Stk. Stk. I Mt. Db. Ord. Stk. Ord. Sh.	24 24 104 6 3/-	18 102 3 1/2½	3½ 22 102½ 4½	94 52 Nil
S S S S S S S S S S S S S S S S S S S	Interoceanic of Mexico La Guaira & Caracas Leopoldina Mexican Midland of Uruguay Nitrate Paraguay Central Peruvian Corporation Salvador San Paulo Taltal United of Havana Uruguay Northern	1,918 483 319 386 274 1,059 100 153½ 160	Feb. 1940 24.2.40 31.1.40 Jan. 1940 29.2.40 Feb. 1940 20.1.40 18.2.40 Jan. 1940 Jan. 1940	6,995 22,848 \$492,900 12,268 16,653 \$3,093,000 66,923 e35,667 37,217 3,660 43,502 1,127	+ 2,340 + 6,134 - \$44,900 + 2,257 + 11,569 + \$467,000 + 5,122 + e917 + 4,715 - 210 - 3,702 + 136	8 8 4 31 8 35 35 30 7 31 35 31	14,605 183,890 \$1,309,100 67,726 45,856 \$108,993,000 531,913 £427,261 221,435 17,800 651,513 7,368	9,405 166,104 \$1,310,500 64,567 19,202 \$105,487,000 539,567 499,464 203,374 20,785 671,337 7,469	+ 5,200 + 17,786 - \$1,400 + 3,159 + 26,654 + \$3,506,000 - 7,654 - £79,203 + 18,061 - 2,985 - 19,824 - 101	Ist Pref. Stk. Ord. Stk. "" Ord. Sh. Pr. Li. Stk. Pref. Pr. Li. Db. Ord. Stk. Ord. Stk. Ord. Stk. Deb. Stk.	7 d. 7 2 d. 2 / 1 d. 2 / 1 d. 2 / 1 d. 2 / 1 d. 2 d.	7½d. 6½ 36 16 20 6/6	38 15 42 1 1 2	Nii Nii Nii Nii 15† Nii 4† 74 Nii
Canada	Canadian Northern Grand Trunk		21.2.40	828,548 608,400	+ 193,984 + 113,800	7 - 8	6,093,899 4,832,200	4,603,492 3,779,000	+ 1,490,407 - 4 p.c. + 1,053,200	Perp. Dbs. 4 p.c. Gar. Ord. Stk.	743 1001 78	60 76 31	78 101± 8±	5# 3# Ni
India †	Assam Bengal Barsi Light Bengal & North Western Bengal Dooars & Extension Bengal-Nagpur Bombay, Baroda & Cl. India Madras & Southern Mahratta Rohilkund & Kumaon South Indian	202 2,096 161 3,267 2,986 2,967 571	31.12.39 10.2.40 10.2.40 31.1.40 20.2.40 31.1.40 10.2.40 31.1.40	47,205 2,295 95,223 2,997 265,425 264,375 180,375 18,973	- 1,741 - 682 + 1,031 - 381 + 29,083 - 9,000 + 2,245 + 1,530 - 6,120	39 47 19 47 45 48 43 19 45	1,169,044 108,885 1,001,310 124,699 6,580,841 7,957,575 4,785,559 210,416 3,398,347	1,123,279 121,470 1,063,461 131,429 5,827,187 7,880,325 4,661,038 197,740 3,430,535	+ 45,765 - 12,585 - 62,151 - 6,730 + 753,654 + 77,250 + 124,521 + 12,676 - 32,188	Ord. Stk. Ord. Sh. Ord. Stk.	76½ 56½ 277 91 94¾ 108 104¼ 280 102½	60 501 2291 841 831 90 92 263 88	76½ 45 273 200 91½ 104½ 102½ 270 91½	3+1 878 3+4 3+4 5+7 5+7 5+7 5+7
Various		623 1,625 277 1,900	Dec. 1939 31.1.40 May 1939 Dec. 1939 30.12.39	65,634 6,177 206,557 13,434 48,803	- 588 - 11,295 - 2,972 - 6,170	13 45 21 26 40	219,638 181,744 1,220,870 73,928 1,336,451	182,356 1,309,332 92,286 1,495,780	- 612 - 88,462 - 15,358 - 159,329	Prf. Sh. B. Deb. Inc. Deb.	55 911	39 87½	47½ 84	Ni 7 41
-	Rhodesia South Africa Victoria	2,442 \$ 3,284 4,774	Dec. 1939 3.2.40 Nov., 1939	672,219	+ 36,281 + 35,215	13 48 21	1,136,075 28,780,141 3,894,087	27,562,749 3,874,553	+ 1,217,392 + 19,534	th-man	_	=	_	-

Note. Yields are based on the approximate current prices and are within a fraction of $\frac{1}{16}$ Argentine traffics are now given in pesos. \uparrow Receipts are calculated @ Is. 6d. to the rupee. \uparrow ex dividend

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